



City of Boulder

TMP₂₀₁₄

Transit Modal Plan

Appendix C: Immediate and Near-Term Service Concepts & Options



ACKNOWLEDGEMENTS

The City of Boulder would like to thank the representatives of multiple city, community, and regional agencies and organizations who participated on the Transit Technical Advisory Committee.

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APPENDIX C NEAR-TERM AND IMMEDIATE SERVICE CONCEPTS AND OPTIONS

INTRODUCTION

Relationship to TMP Policy

The City of Boulder's actions in the Immediate and Near-Term time frames identified in the TMP will have a direct influence on the effectiveness of the outcomes for the Renewed Vision for Transit. Implementing the vision must be accomplished step-by-step. The Renewed Vision for Transit includes only a few major components, such as US 36 BRT, but many more small but significant complementary elements that incrementally improve connectivity, convenience, and usability. Transit in every urban area operates as a network. That does not suggest that every part of the network must be equally strong, but the inter-relationship of its constituent parts has a direct bearing on improved mobility. The synergistic effects of many smaller improvements are the first step in implementing the strong transit network that the Renewed Vision for Transit and related TMP policies are designed to build.

Relationship to Transit Modal Plan

The following pages present several immediate and near-term issues that, taken together, build the strength of the transit system in Boulder. Each of them is consistent with the Renewed Vision for Transit, the service policies and standards outlined in the Transit Modal Plan (Chapter 3), and is also consistent with the Transit Action Plan. In many respects this Appendix lays out a work plan for Boulder staff over the next two years to continuously build toward the Renewed Vision.

Issue Areas to be Addressed

This Appendix addresses each of the issues listed below. Failure to address any one of these items does not necessarily mean the City fails to realize the Renewed Vision for Transit, it simply means the Renewed Vision will not be as successful in achieving the goals established by the City of Boulder. The component parts are laid out within each section of this document, including a potential timeline and suggested next steps. The issue areas are:

- Service change coordination with RTD and partners

- CU East Campus connectivity
- US 36 BRT
- Development of Boulder Junction and adaptation of the local network
- Activity center connectivity
- Inter-regional services
- Filling frequency gaps

ISSUE AREA: COORDINATION WITH RTD AND PARTNERS

The City of Boulder exercises partnerships to carry out the implementation of the Transit Action Plan. A very significant partner in that process is RTD. As a large regional transit agency RTD has a necessarily detailed process to consider and implement changes to its service offerings. The process for making service changes occurs three times a year and is referred to as a “runboard.” The name reflects the fact that transit operators sign up for their work through a “runboard.” The changes coincide with the beginning of the school year, the end of the school year and a mid-point between those in the winter. At these times, RTD modifies services based on changes in the level of secondary and post-secondary school activity.

Boulder plans to continue to work with RTD and other community partners such as CU, Boulder County, and Via to implement service changes consistent with the Transit Action Plan and the Renewed Vision for Transit. In general, these partners would work collectively with RTD on each service change to ensure the plan can be carried out. This requires that all partners understand RTD’s process and work with RTD within that process to ensure smooth implementation. Figure C-1 illustrates RTD’s typical runboard calendar and the timing for service change requests from the City of Boulder and the other transit partners.

Figure C-1 Generalized RTD Runboard Typical Process and Timeline



More specifically, for the next two years, the work plan has longer lead time items due to the implementation of US 36 BRT. Figure C-2 provides the work plan calendar for service changes through January 2016.

Figure C-2 RTD Runboard Process and Dates for January 2015 to January 2016 Implementation

Step	Description	Dates for Immediate or Near-Term Service Changes				
		Aug 2014	Jan 2015	May 2015	Aug 2015	Jan 2016 / US 36 BRT ^{a,b}
1	Desired Changes from Boulder to RTD Service Planning ^a	Changes are already final	July 25, 2014	Jan 8, 2015 (changes for US 36 BRT opening also required in this time frame)	Feb 20, 2015	January 2015 ^{a,b}
2	RTD Internal Deadline for Changes		Aug 1, 2014	Jan 15, 2015	Mar 1, 2015	TBD - anticipated to be earlier than standard schedule ^b
	Finalized Proposed List to Marketing		Aug 15, 2014	Feb 1, 2015	Mar 15, 2015	TBD - anticipated to be earlier than standard schedule ^b
3	Announcement of Proposed Changes		1 st Week of Sept 2014	Mid-Feb 2015	Mid-April 2015	TBD - anticipated to be earlier than standard schedule ^b
4	Public Process/Hearings		Last week of Sept to 1 st two weeks of Oct, 2014	1 st week of March 2015	1 st week of May 2015	TBD - anticipated to be earlier than standard schedule ^b
5	Final Changes		Last week of Oct 2014	Mid-March 2015	Last week of May 2015	Last week of Oct 2015
	Board Approval	Last week of Oct 2014	Mid-March or 3 rd week of March 2015	First week of June 2015	Last week of Oct 2015	
6	Final Runboard	2 nd or 3 rd Sunday of August 2014 ^c	1 st Sunday of Jan 2015	2 nd Sunday of May 2015	2 nd or 3 rd Sunday of August 2015 ^c	1 st Sunday of Jan 2016

Notes: (a) All proposed route changes associated with US 36 BRT will need to be identified no later than January 2015 (same time frame as May 2015 service changes) to be included in the full outreach process for FasTracks 2016 project implementation, which starts in early 2015. (b) Due to volume of anticipated service changes, January 2016 lead time may be similar to that for August 2015 service changes. (c) Varies based on school startup.

ISSUE AREA: CU EAST CAMPUS CONNECTIVITY

Overview

CU's growth plans for the Boulder Campus are oriented to development and re-development of the East Campus area generally bounded by 30th Street and Foothills Parkway to the west and east and Colorado and Arapahoe Avenues to the south and north. The earliest changes to this area will occur in the southeast sector with development of the SEEC (Sustainability, Energy and Environment Complex) Center. This development includes repurposing existing buildings to a higher-intensity use and adding additional high-intensity uses in new adjacent buildings. The phase-in process begins in January 2015 and will continue over the next two to three years.

Already a hub of East Campus activity, this area is connected to the Main Campus by the Stampede route (see Figure C-3); many students, staff, and faculty move between the two campuses throughout the day. The Stampede was originally funded through a Congestion Mitigation and Air Quality (CMAQ) Improvement grant provided to CU and is operated as partnership between CU, RTD, and the City of Boulder. The route has been very successful in attracting a substantial number of daily trips and today is often overloaded during the busiest periods, e.g., class change times. Stampede users have lodged concerns about capacity and reliability issues.

The Renewed Vision for Transit recognizes the need to evolve the Main and East Campus connection to a system that offers greater capacity, higher frequency, and improved reliability as well as providing more direct connections between the East Campus area and other parts of the community.

The Immediate time frame options are focused on the first stages of achieving those objectives while also laying the groundwork for further future expansion. The City of Boulder expects to continue working in partnership with CU and RTD to launch new services that anticipate the growth in the East Campus area. It is also crucial to understand that while RTD does work to anticipate changes in demand and new needs, the mainstay strategy is to respond to ridership growth and the issues that may bring once the need has been demonstrated rather than anticipated.

Problem Statement

The need to address this issue area is captured in the following problem statement:

- Trips at certain times on the Stampede are overcrowded to the point that riders are passed up.
- CU will begin intensifying demand in the East Campus area in January 2015 and continue over the next several years. Current projections prepared by CU suggest demand for transit in this part of the campus could double within two years.
- The US 36 BRT will offer great connectivity to the Main Campus, but less so to the more eastern parts of the East Campus. Given the relocation of programs from Main to East Campus, demand for connections from the US 36 corridor to East Campus will increase substantially over the immediate term.

Relevant TMP Transit Policies

Improving connectivity between Main Campus and East Campus are consistent with the Renewed Vision for Transit and TMP Transit Service Policies:

- **Incrementally improve and expand the high-frequency Community Transit Network (CTN)** throughout Boulder County as funding allows.
- **Work with RTD to develop performance agreements** that ensure service hours gained through City-funded capital investments will be reinvested in routes that serve Boulder, particularly the CTN.
- **Enhance connections between the following major developing activity centers:** CU Main and East Campuses, and the Boulder Junction, Table Mesa, and North Boulder transit centers.

Service Concepts and Options

Three service options, including one with two sub-options, are outlined below.

Option 1. For the most immediate needs RTD is already moving to add trips to the Stampede to address over-crowded trips.

Pros:

- Good short term solution

Cons:

- Does not address growth needs
- Not most efficient solution given the location of the growth on East Campus
- Does little to offer greater connectivity especially to US 36 services

Option 2. Add a new component to the Stampede (see Figure C-4)

This option proposes to layer a shorter version of the Stampede onto the current route. The “short turn” to the southeast part of East Campus is happily located in such a manner that the long and short versions of the Stampede will nest together perfectly in terms of maintaining a consistent headway between the two campuses. Although one of the operational issues for the Stampede is lack of reliable running times due to congestion experienced as it traverses the Main Campus.

Pros:

- Works with current route structure
- Easy to add frequency as necessary and focuses added service where it is needed most so it is more efficient.
- Can modularize service additions, as needed, to balance demand between the northern part of east campus and southeastern part of east campus.

Cons:

- For people travelling from main campus to beyond the SEEC, they must pay attention to which Stampede bus they board.
- Does not address the reliability issue of the current Stampede

It is suggested that to address this latter issue a study be conducted to fully understand exactly where along the route delays and reliability issues are experienced. With RTD’s current AVL data, these locations and the degree of delay and degradation of reliability can be pinpointed without extensive field study. With that information in hand the specific locations can be evaluated for possible solutions. This may include changes to the route,

methods to better separate and delineate pedestrian and vehicle traffic, changes to stop locations, and/or modifications to traffic control devices.

Option 3. Utilize Route 209 as a resource

This option is proposed as a modification to RTD Route 209. Today most of the ridership on Route 209 is collected in the areas of CU Main and East Campus (see-stop level ridership illustrated in Figure C-5). While the route provides access to a high concentration of seniors in the Frasier Meadows area and the Thunderbird neighborhood, it has struggled for many years to be a productive service and performs poorly in RTD's service standards evaluation, making it a nearly continuous focus for service reductions and route modifications. Due to its proximity to CU Main and East Campus and the Table Mesa Park-and-Ride/Transit Center, it is a very logical candidate to test options that will both improve the productivity of the service hours invested in the route as well as provide connectivity between East Campus and US 36 BRT. There are two, and likely more, potential sub-options to address this challenge. Additional analysis and work with riders, neighborhoods and partners needs to occur to test the viability of these options as well as others that may arise. One finding that must be kept in mind is that the Thunderbird neighborhood is highly unlikely to develop enough transit demand to support a productive transit route on its own. If fixed-route service is provided in the area, it must necessarily be tied to areas where transit demand is high enough to also support this area of low productivity.

Sub option 3a.) Substitute a Call-and-Ride service in the Thunderbird neighborhood for Route 209 and reinvest Route 209 resources into the Main Campus/East Campus connection (see Figure C-6).

Pros:

- Resolves low productivity issue for route 209. Note that route 209 has been perpetually outside the bounds of RTD's performance standards and will be an on-going risk for service reductions. Anything that can be done to improve the resource utilization will be a step toward ensuring those resources remain in Boulder.
- Establishes a route that can be easily expanded as demand develops
- Allows separation of demand of CU activity with neighborhood activity which have differing time of day, day of week, and time of year profiles.

Cons:

- Requires riders to learn a new service type (neighborhood call and ride) not presently offered in Boulder
- Service in neighborhood will be more costly on a per person basis than the current service.
- Removes some of the flexibility offered by fixed route transit service for riders.
- Creates two versions of an already low productivity route which may lead to customer confusion

Sub option 3b.) Start Route 209 in the Thunderbird neighborhood, proceed to Table Mesa then to CU East Campus (see Figure C-7). Note that the option map in Figure C-7 shows the route starting at Table Mesa. The route could easily also start in the vicinity of Frasier Meadows then proceed to Table Mesa and on to CU East Campus as depicted in the figure.

Pros:

- May resolve low productivity issue for route 209
- Provides connection from Table Mesa to East Campus
- Establishes a route that can be easily expanded as demand develops
- Allows some separation of demand (utilizing short-turn version of Table Mesa to East Campus route similar to sub-option a.) between CU activity and neighborhood activity which have differing time of day, day of week, and time of year profiles.
- Provides Thunderbird riders a direct connection to US 36 BRT and a much faster connection to destinations in South Boulder

Cons:

- Thunderbird riders will have a less direct, but still possible, connection to downtown Boulder
- Does not address low productivity of Thunderbird neighborhood, but does allow it to be better integrated into higher productivity services.

Implementation

Partnership Opportunities

As indicated above the implementation of these options will require a fully cooperative effort between the City, CU, and RTD with a potential Via role in maintaining service in the Thunderbird neighborhood. CU is presently exploring the potential to extend the time horizon of the unexpended portion of the CMAQ grant to help offset some of the costs of improving capacity between CU campuses.

The City of Boulder's interests can also be served by ensuring that RTD resources invested in Route 209 are retained for use in the City of Boulder and are used to help to build a foundation for expansion of the CTN network.

Next Steps

1. Final service planning to address capacity issues and assemble funding plan (Summer 2014)
2. Flesh out options for Route 209 and engage the Thunderbird neighborhood in vetting the options (Fall 2014)
3. Launch study to identify causes of Stampede reliability issues and form options to deal with those issues. (Begin Summer 2014, finish Fall 2014, implement solutions as they can be developed and funded)
4. Real-time information is a high priority for all transit service in Boulder, but could be extremely useful on the Stampede. The Stampede could be used as a pilot for open source real-time information or other real-time information solutions developed by RTD. While other areas would also benefit, in this case real-time information would help mitigate reliability issues on the Stampede.

Figure C-3 Stampede Existing Boarding and Alightings by Stop (Daily Weekday, Fall 2012)

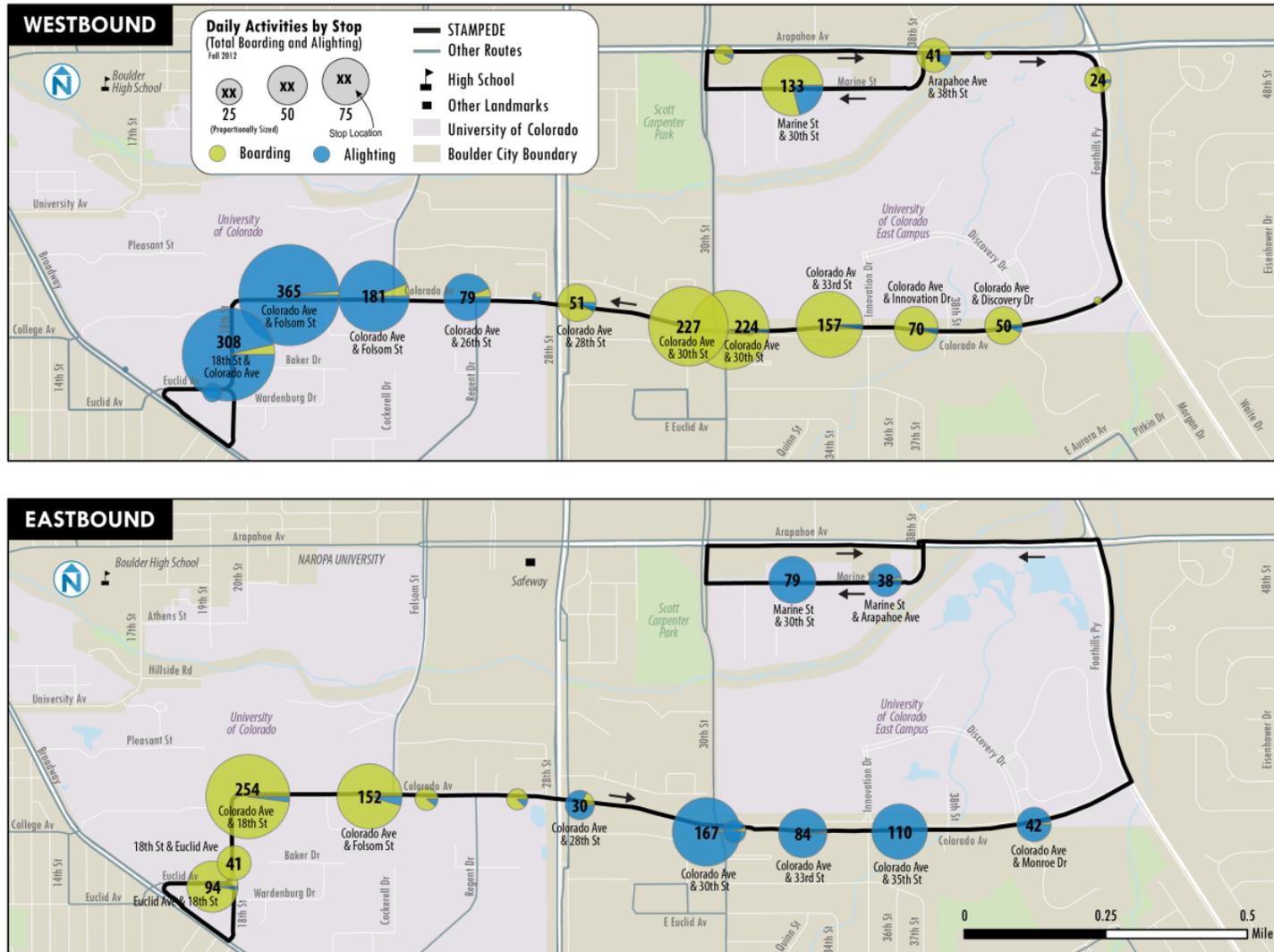


Figure C-4 Stampede Proposed Added Short Turn (Immediate Action Plan)

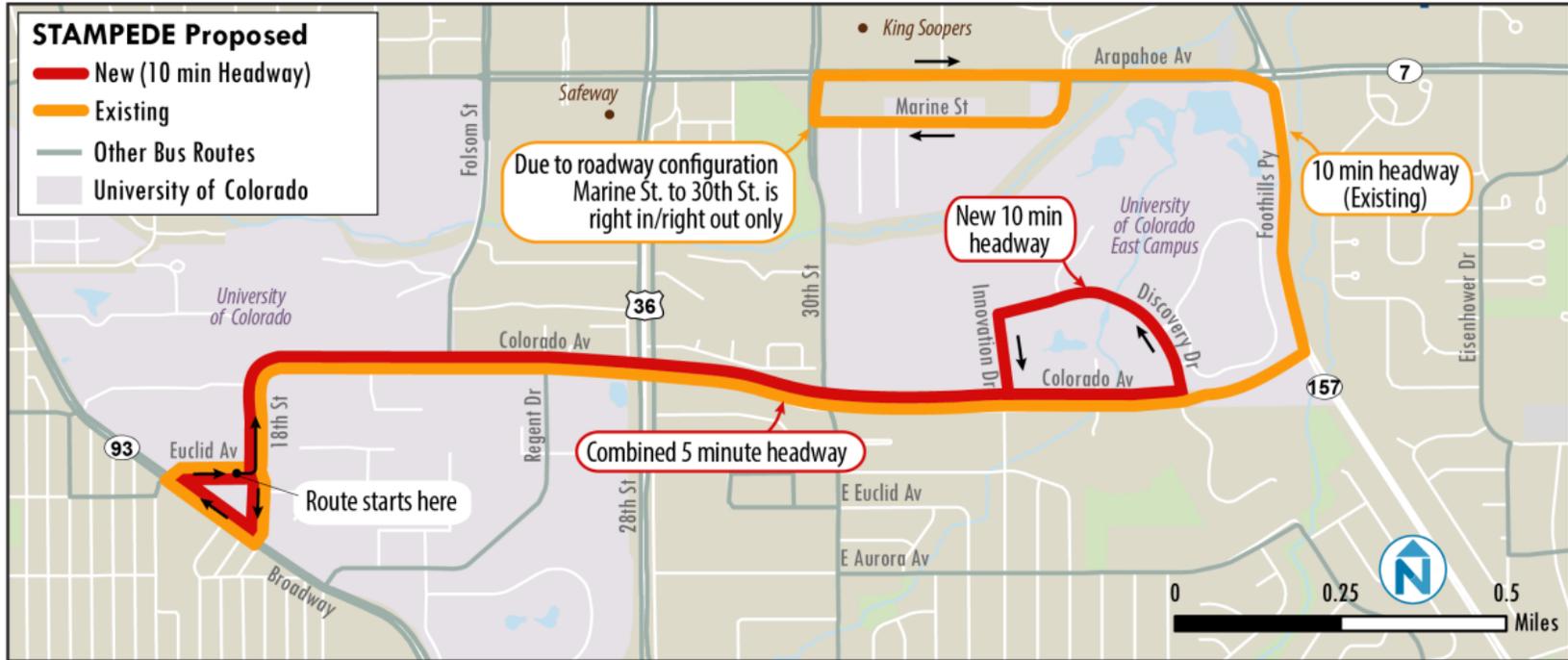


Figure C-5 Route 209 Existing Boardings and Alightings (Daily Weekday, Fall 2012)

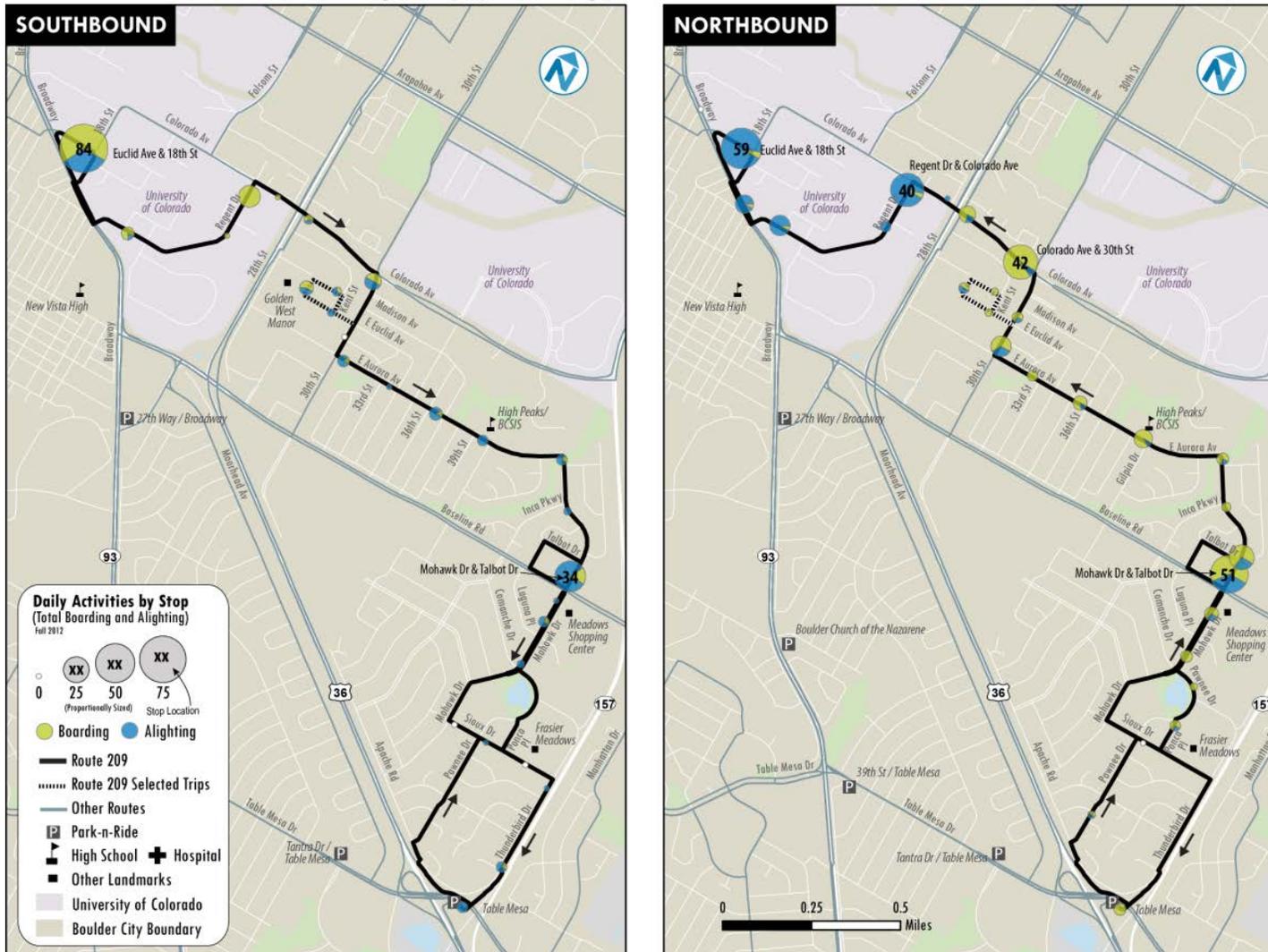


Figure C-6 Route 209 Option (a) – Main Campus to CU East Campus (Immediate)

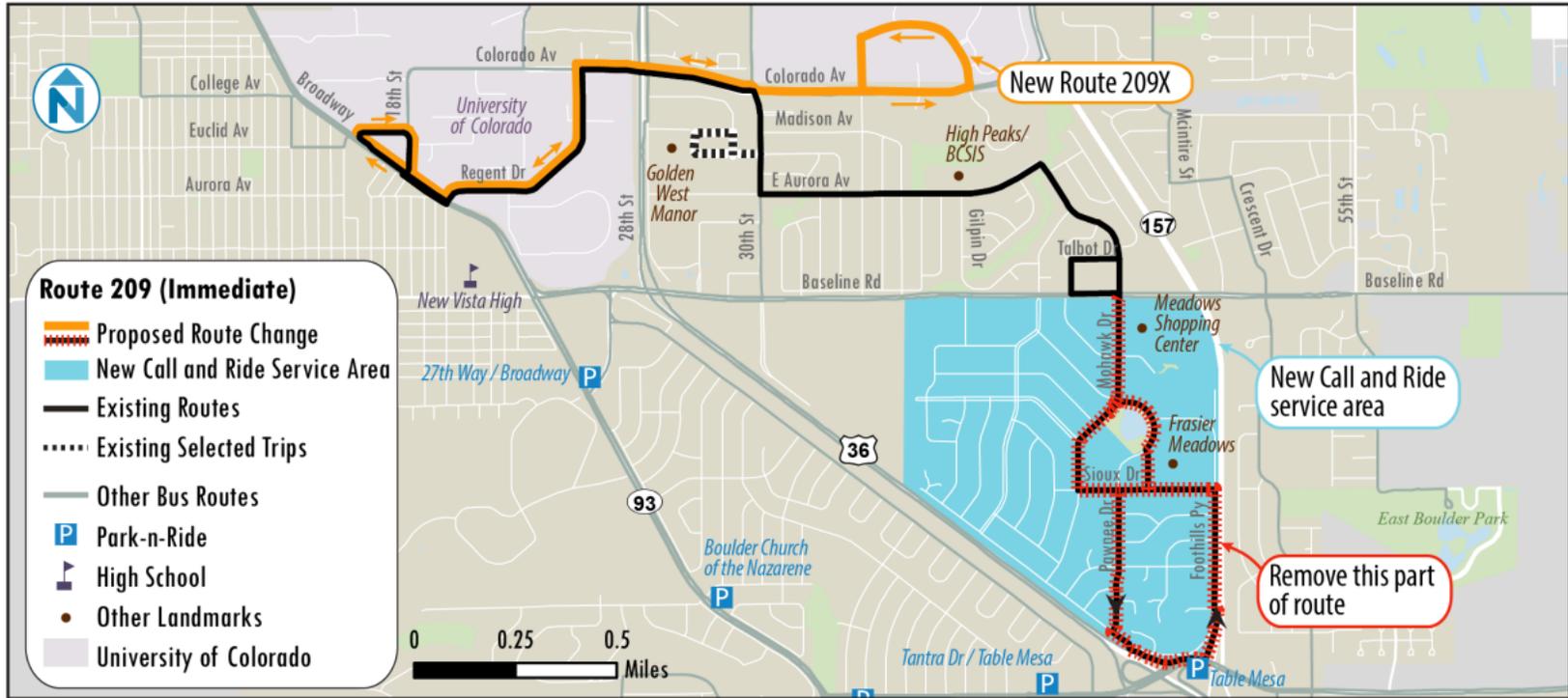


Figure C-7 Route 209 Option (b) – Table Mesa to CU East Campus (Near Term)



ISSUE AREA: US 36 BRT – REGIONAL SERVICES

Overview

Problem Statement

US 36 BRT service will be introduced in January 2016. North of Table Mesa Park-and-Ride it will operate to Boulder Junction and to the downtown Boulder TC. The operating plan for the service north of Table Mesa Park-and-Ride is under development as this document is being prepared. For Boulder, the frequency of service to Boulder Junction and to downtown Boulder that is specified in the operating plan will affect how well US 36 BRT addresses Boulder's goal of improving regional connectivity and increasing in-commuting on transit.

There are limited options to effectively address this issue. It is essential to have attractive service to Boulder Junction at the outset of US 36 BRT service. This means service between Boulder Junction and Table Mesa Park-and-Ride that operates at least every 15 minutes at peak times and not less than 30 minutes in off-peak periods. At the same time, it is equally crucial that this level of service is not achieved by re-allocating service from the Broadway corridor. Until RTD has developed the operating plan for US 36 BRT, framing options for this extremely complex service is impractical. However, there are activities that Boulder should engage in to ensure a workable base of information is available to conduct partnership discussions with RTD when the service plan becomes known.

Relevant TMP Transit Policies

This issue is of high importance to the city and is addressed by the following TMP transit service policy:

- **Work with RTD and partners to establish a high level of US 36 BRT service to Boulder Junction with no degradation of US 36 service on Broadway to Downtown Boulder.**

Implementation/Next Steps

1. **Establish a point person to engage with RTD on this issue** to ensure that early drafts of the operating plan are shared with Boulder and other transit partners. Boulder can immediately begin to assess the plan and its influences and impacts on Boulder. (Summer 2014)
2. **Conduct a transit capacity analysis on Broadway.** This should commence with the start of classes at CU in August 2014. The analysis should be able to utilize APC data from RTD, but this needs to be investigated immediately to ensure that individual trip-level data are available. It is essential to compare the loads and capacity utilization on buses between the downtown Transit Center and Table Mesa Park-and-Ride. This would include all regional buses and the Skip and Dash routes. The objective is to understand how loads vary by time of day, where the maximum load point occurs, if there are options to "protect" regional service capacity by encouraging local use of the Skip and Dash, and other issues that may arise. Today the generalized load profile of regional services, Skip, and Dash on Broadway are known; what has not been assessed is what capacity utilization looks like at a far

more granular level. This study is intended to achieve that level of granularity and provide Boulder with data that can be used in conversations with RTD. (Summer 2014)

ISSUE AREA: BOULDER JUNCTION – ADAPTATION OF LOCAL NETWORK

Overview

The transit plaza at Boulder Junction, also called Depot Square, will officially open with the start of US 36 BRT service. The transit facility at this location is underground and will take time to enter and exit. Therefore, the transit facility has been envisioned to be only a terminal point and not necessarily a transfer point like the downtown transit center. The long-term vision for Boulder Junction is to improve the street grid in the area to be a fine-grained network that will allow transit to more effectively integrate this area with many other neighborhoods in Boulder. Until that development occurs, however, there are only limited options to serve the area.

Problem Statement

At the present level of development and occupancy this is a minor issue, but one that will need continuous attention as the area builds out. Fortunately, the edge of the Boulder Junction area is very well served by two CTN Routes (Hop and Bound) and two numbered routes 206 and 208. As shown in Figure C-8, these four routes are within easy walking distance of Depot Square and other than ensuring excellent wayfinding is installed between locations no further action is warranted to integrate these routes into the area.

Relevant TMP Transit Policies

There are opportunities that should be explored that will further enhance access at an early stage as well as improve transit productivity. These options are consistent with the following TMP policy:

- **Enhance connections between the following major developing activity centers:** CU Main and East Campuses, and the Boulder Junction, Table Mesa, and North Boulder transit centers.

Service Concepts and Options

One option is outlined below.

Option 1. Modify Route 206

Route 206 was primarily designed to connect East Boulder with South Boulder. At one point the route used to terminate in the Boulder Junction vicinity but a few years ago was extended to downtown via Pearl, 28th, and Canyon. While this added segment offers connectivity it has poor productivity mainly due to the fact that the route is almost entirely duplicated by other services (see Figure C-9 which illustrates the ridership pattern). This offers an opportunity to improve the route's productivity (important to ensure the resources stay in Boulder) and provide connectivity to a new neighborhood, namely the area on either side of Edgewood and Balsam between 30th and Broadway. This option, depicted in Figure C-10, continues to provide the same connectivity but also provides an opportunity to improve access to Boulder Junction from the neighborhood immediately north of downtown.

Pros:

- Improves neighborhood connectivity
- Potential to improve route productivity (Route 206 lies very close to the edge of RTD's performance standards and may be at risk for service reductions.)
- Reduces route duplication, existing as well as with planned SH-119 BRT on 28th and Canyon

Cons:

- Slightly reduces options for people along Canyon to reach Boulder Junction
- If students from the East Boulder area are using this as a way to reach either CU or Boulder High School, it takes them farther away from their destination.

Implementation/Next Steps

1. Conduct timing study of alternate route path. (Summer 2014)
2. Conduct rider outreach on the route. (Fall 2014)
3. Conduct neighborhood outreach along Edgewood/Balsam corridor. (Ensure the neighborhood desires the connectivity that would be provided.)

At full development of Boulder Junction and the route modifications suggested in this and the next section, access to Boulder Junction from many parts of Boulder will be substantially improved. The potential future transit network serving Boulder Junction is depicted in Figure C-11.

Figure C-8 Local Service and Pedestrian Access in Boulder Junction Area

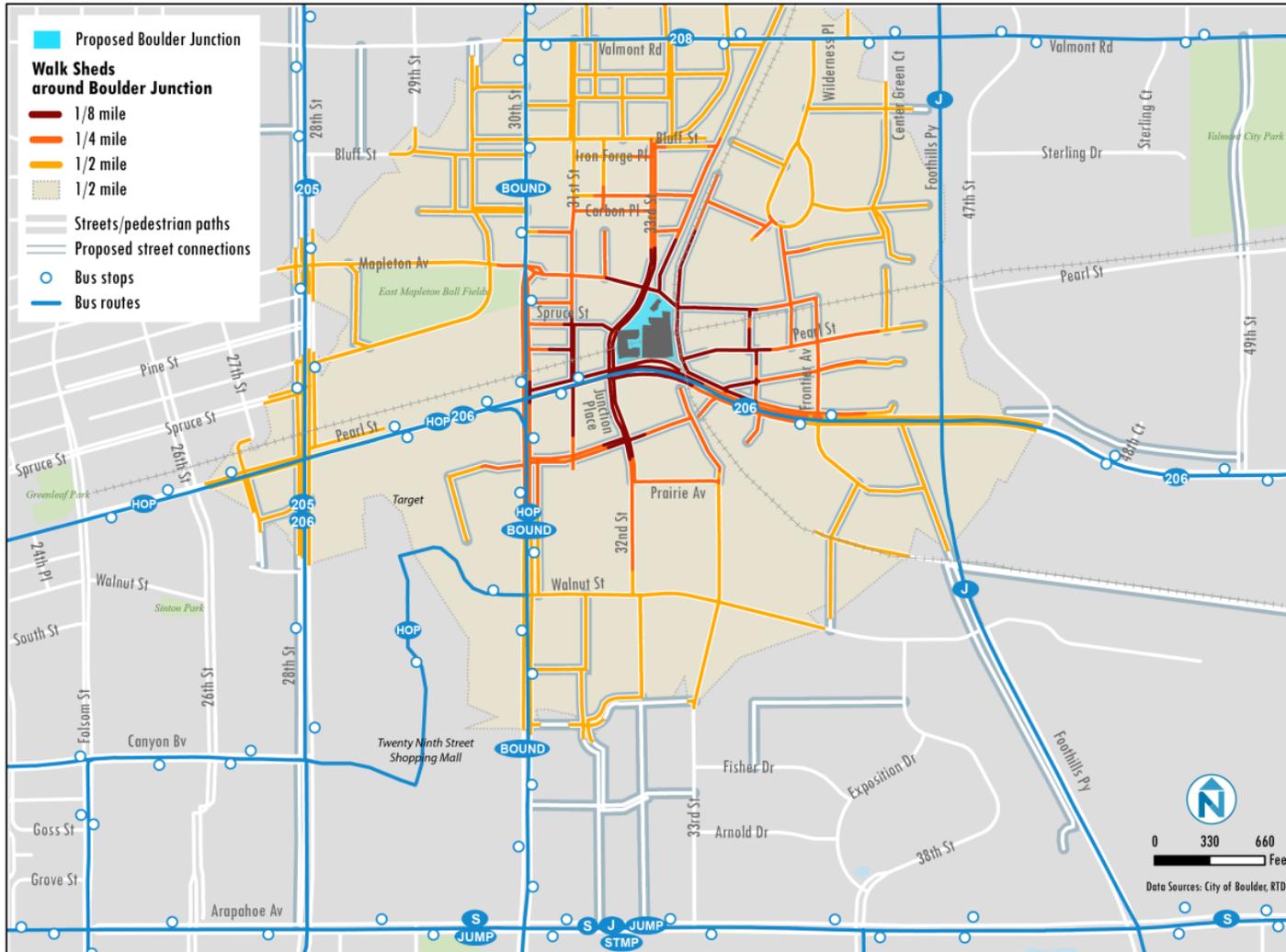


Figure C-9 Existing Route 206 Boardings and Alightings by Stop (Daily Weekday, Fall 2012)

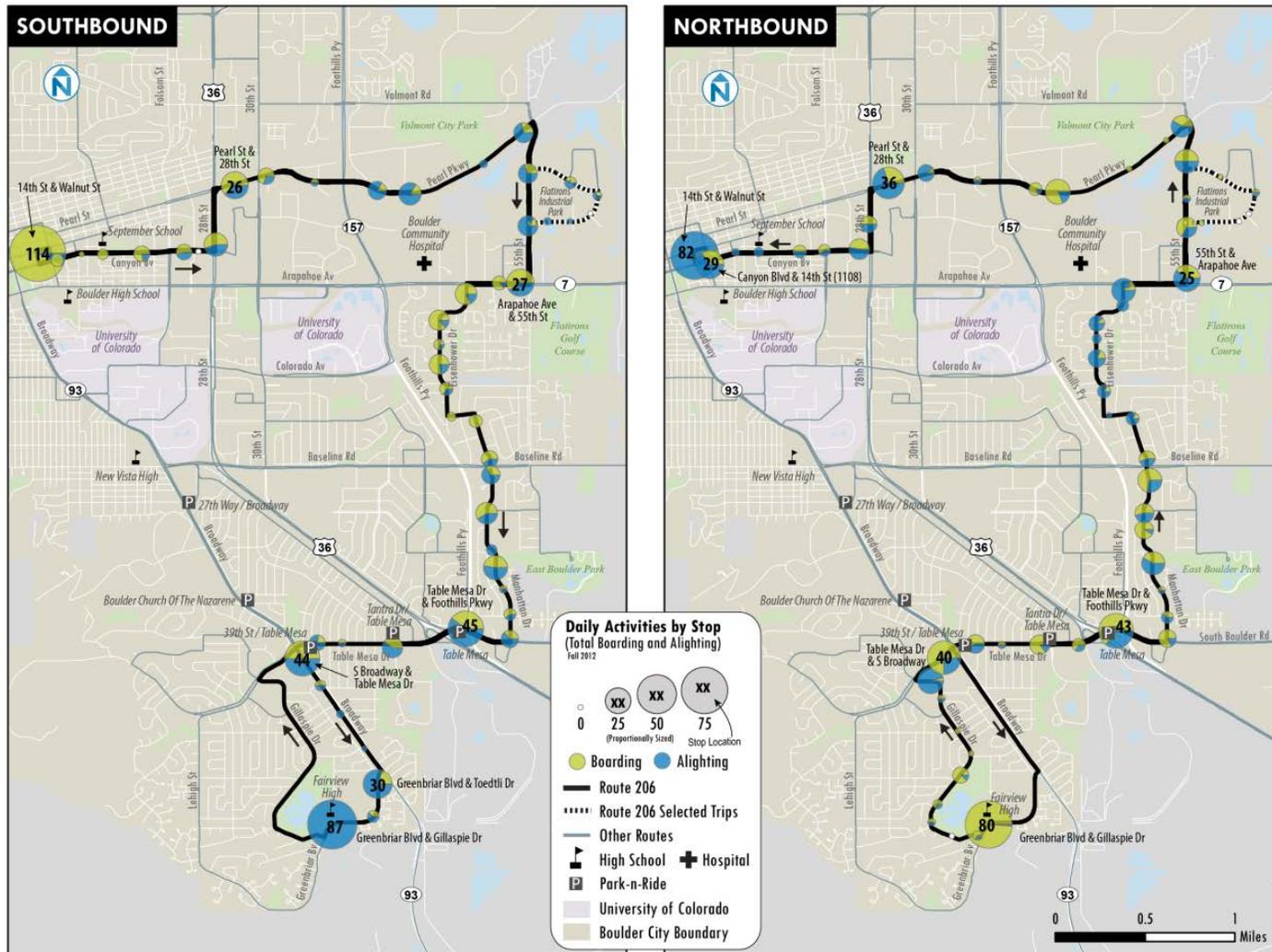


Figure C-10 Option to Modify Route 206 (Proposed)

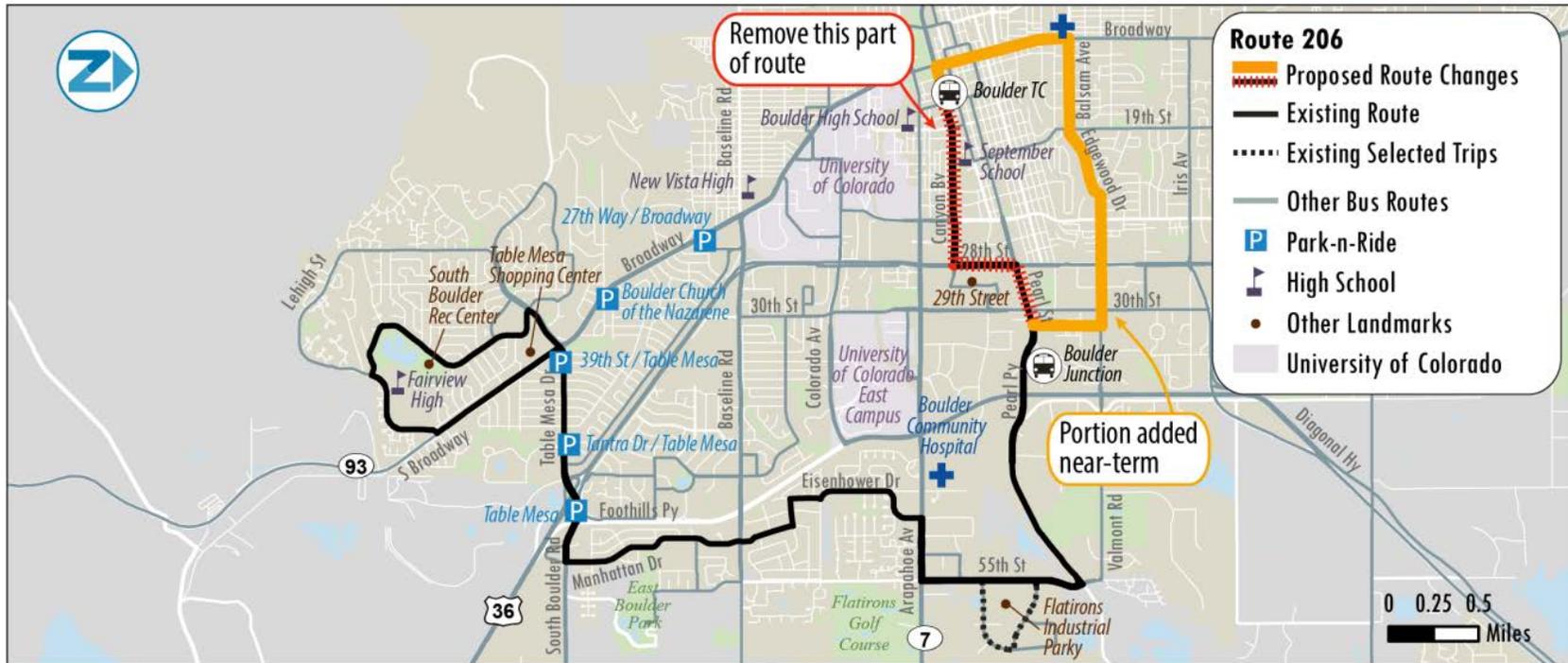
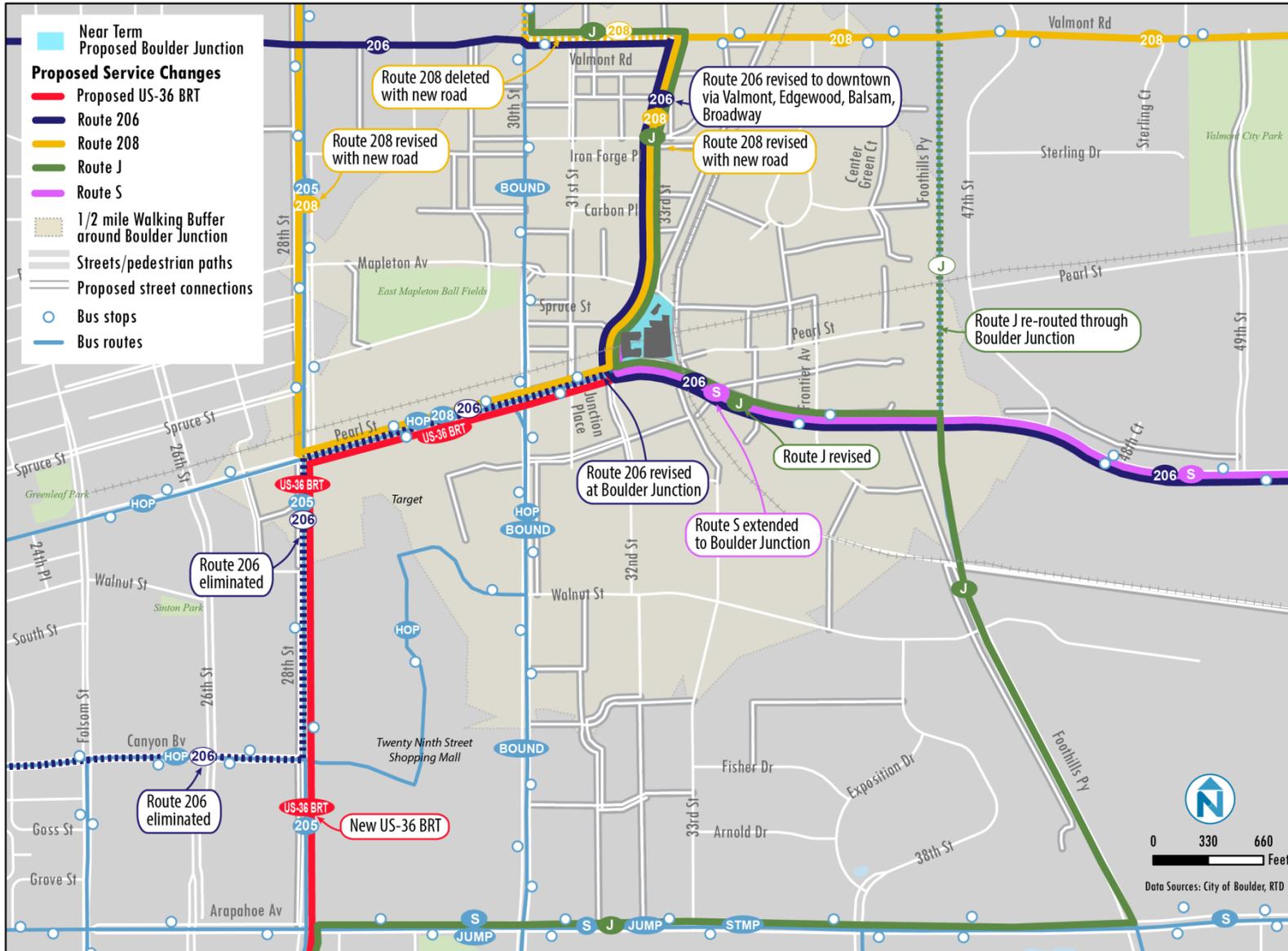


Figure C-11 Boulder Junction Access at Full Deployment of Potential Route Modifications



ISSUE AREA: ACTIVITY CENTER CONNECTIVITY

Overview

Problem Statement

As Boulder Junction continues to build out and the North Boulder Transit Center takes shape, the need to interconnect expanding and existing activity centers and neighborhoods to these new centers is crucial to the overall usefulness of the transit network.

Relevant TMP Transit Policies

The TMP addresses this issue in the following policies:

- Incrementally improve and expand the high-frequency Community Transit Network (CTN) throughout Boulder County as funding allows
- Enhance connections between the following major developing activity centers: CU Main and East Campuses, and the Boulder Junction, Table Mesa, and North Boulder transit centers

Service Concepts and Options

Three options are outlined below.

Option 1. Extend the Bound

This option would extend the current “Bound” route from its terminal at 30th and Diagonal to the west and north to the North Boulder Transit Center. Figure C-12 depicts one possible way to accomplish the connection. As presented, extending the Bound along Iris and Broadway adds a new street to the CTN network and provides direct connectivity from both north Broadway and the North Boulder TC to the entire length of the 30th Street corridor and a direct connection to Boulder Junction. *However, there are other options available, and those options should be carefully considered at the time this is ready to proceed.*

Pros:

- Offers a nearly instant opportunity for CTN connection between North Boulder and Boulder Junction
- Does not negatively impact any current Bound riders

Cons:

- Will be an expensive addition to the Bound with nearly a 40% increase in operating cost.
- Depending on the level of development in Boulder Junction, early implementation may suffer from lack of productivity, which may make partnership contributions from RTD difficult to secure

Implementation/Next Steps

1. Carefully consider the potential pathways between the current terminus of the Bound and North Boulder. (Winter 2015)
2. Conduct timing studies to ensure the assumed cycle times are correct. (Winter 2015)
3. Establish a funding/partnership package to implement. Note that this extension should not be implemented until the North Boulder TC is funded and moving forward. (Summer 2015)

Option 2. Adapt Route 205 to Enhance South Boulder access

This is less an “option” than it is a separate consideration. The current CTN does not provide a direct connection from South Boulder to Boulder Junction; rather, a transfer is required to make this connection, although that transfer can be made at several locations. Secondly, an often-repeated criticism of the current network is that people from South Boulder cannot easily reach 28th Street and the large number of retail establishments along that corridor.

Figure C-13 depicts an adaptation of Route 205 that could make this connection workable. Route 205 currently serves downtown Boulder. As proposed, it would connect to South Boulder. This would provide a CTN route serving the entire length of 28th Street (as far north as Jay) and that is within a three-block walk to Boulder Junction with very well-defined and comfortable pedestrian facilities. The other benefit is that it would provide a direct, no-transfer connection between South Boulder and Gunbarrel.

This option is shown at the ultimate development but could easily be implemented in phases. The first phase would be re-aligning and extending Route 205. Note that this may have negative consequences for people in Gunbarrel who need to reach downtown Boulder or CU; however, several existing high-frequency connections are available to facilitate that movement and future BRT service on SH 119 will provide additional high-frequency connections. Today, Route 205 is a low productivity service. While it is difficult to make a case that this change is good for some current Route 205 riders, it is equally accurate to observe that the current connectivity provided by the route does little to enhance its productivity.

Pros:

- Provides enhanced neighborhood connectivity
- Provides single route service along the length of 28th Street
- Strengthens connectivity to Boulder Junction area
- Likely to improve productivity of current service. (Route 205 lies very close to the edge of RTD’s performance standards and may be at risk for service reductions.)

Cons:

- May require some current riders to transfer
- Will increase service costs, which may be difficult to attract partnership funds for RTD

Implementation/Next Steps

1. Investigate current route usage patterns to better understand exactly how people are using Route 205. This may require a survey, direct observation, or both to understand the patterns. (Winter 2015)
2. Work with the communities to establish a long term proposal for Route 205. (Spring 2015)
3. Coordinate this effort with development of SH 119 BRT service as it may provide opportunities for this route to assume some of the underlying local circulation and allow SH 119 BRT to focus on longer distance trips. (Summer 2015).
4. Develop an operating plan for the extended route to ascertain the need for additional resources, if any. (Summer 2015)
5. Develop an implementation and phase-in plan that is coordinated with SH 119 BRT deployment. (Summer 2015)

Option 3. Route 208 Modification – Improve Activity Center Connectivity

As with Option 2 this is less of an “option” than it is a separate consideration. The current CTN does not allow a direct connection from East Boulder to Boulder Junction, nor is the east Boulder Community Center easily accessible to people who live anywhere other than Baseline Road. Rather, this connection must always be made with a transfer and often a transfer that involves significant out-of-direction travel. The option discussed here presents a different way to operate Route 208 and also creates an opportunity to provide enhanced connectivity between North Boulder neighborhoods and Boulder Junction and/or East Boulder.

The details of this option are shown in Figure C-14 at full development. There are several options for how this might either be phased in and what pathway is taken to North Boulder TC. For example, this route could be the initial option for providing service on 26th; alternatively, it could also lead to development of CTN service on 19th Street.

One important detail is that the Boulder Junction to North Boulder portion of this change should not be implemented until the new street connection is created in Boulder Junction from Valmont to Pearl Parkway, and that portion should also be completed in conjunction with the extension of the Bound (see Option 1 above).

The southeastern portion of this route change could be pursued independently and offers improved access to the East Boulder Community Center while also providing a change for Route 225 that is consistent with RTD Service standards.

Today Route 225 makes a connection along Baseline Road from Lafayette to CU Main Campus and downtown Boulder. However, the direct route is interrupted with a considerable deviation, about six minutes off Baseline to serve the East Boulder Community Center. This deviation makes Route 225 less productive and less attractive to through riders. In fact, the route is out of compliance with RTD service standards, which establishes a maximum of a three-minute delay for through riders for each rider served by the deviation. In this case the ratio of through riders to riders served on the deviation is nearly 7 to 1. This means the delay to through riders exceeds the RTD standard a factor of about 14 times. In other words, for each passenger served on the deviation, through riders experience a combined delay of 42 minutes. The RTD standard is that this number should not exceed 3 minutes. This option provides a solution to the problem while also enhancing neighborhood connectivity.

Pros:

- Enhances connectivity for low income neighborhoods in Boulder
- Provides better connectivity and improved access to East Boulder Community Center. (The proposal would establish connectivity from routes 206, JUMP, BOUND, BOLT, 205 and HOP whereas today these connections can only be made in Downtown Boulder.)
- Provides direct connectivity between neighborhoods along Valmont to Boulder Junction and the US 36 BRT.
- Brings route 225 into alignment with RTD service standards

Cons:

- For current trip patterns introduces some out of direction travel.
- People on route 225 who go to the East Boulder Community Center will require a transfer
- Will increase costs of the network.

Implementation/Next Steps

1. Get updated data on boardings and alightings on Route 225 as well as origin and destination information. (Fall 2014)
2. Carefully track development of Boulder Junction street network and prepare to implement in conjunction with new street development. (2015)
3. Coordinate with other two options in this section for adding connectivity to North Boulder to ensure that maximum advantage is gained in terms of neighborhood access and reducing route duplication. (2015)
4. Conduct Title VI analysis to ensure the proposal is beneficial to low-income residents and not burdensome. (2015)
5. Align partnership funding opportunities as it appears this may become implementable. (2015)

Figure C-12 Option to Extend the Bound

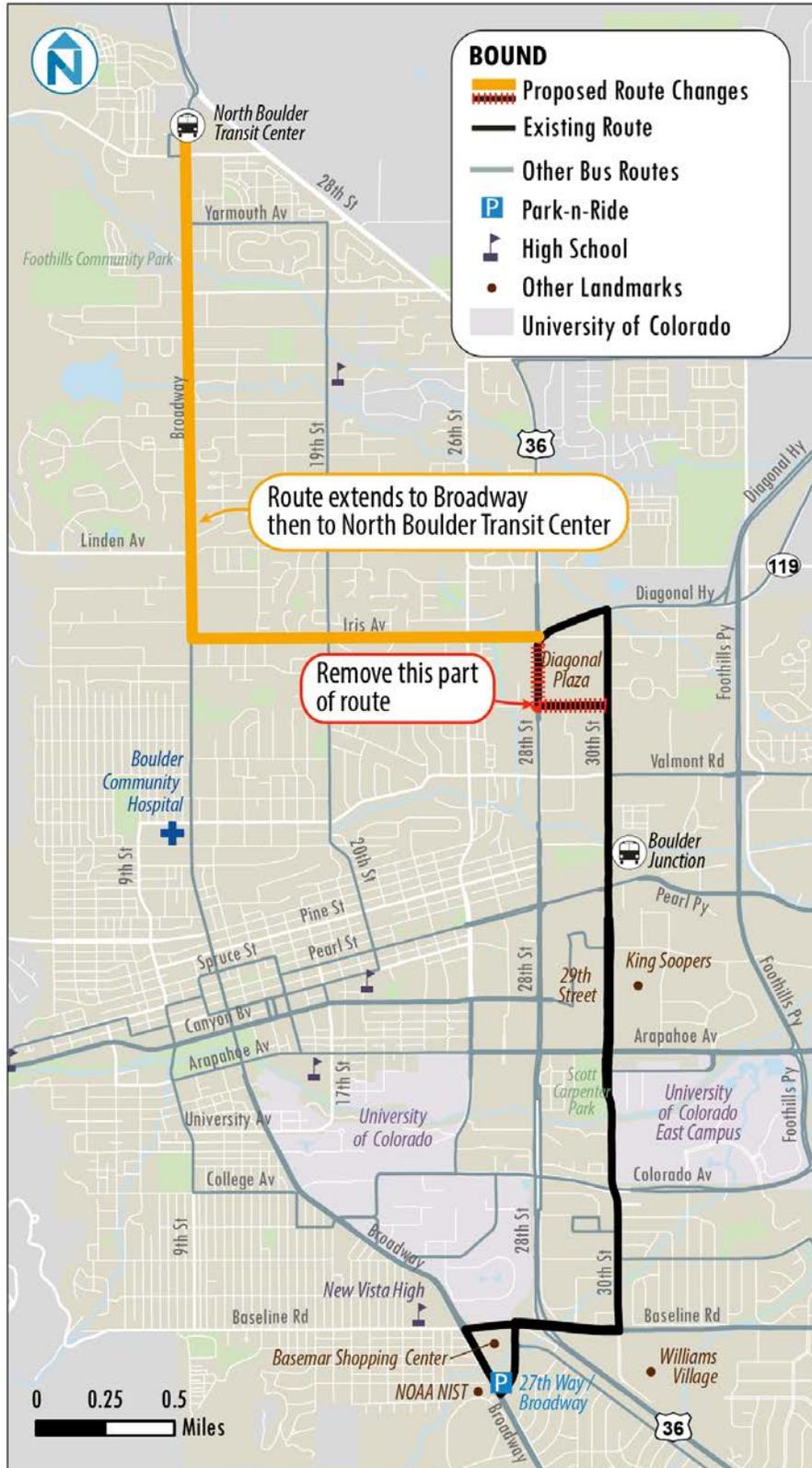
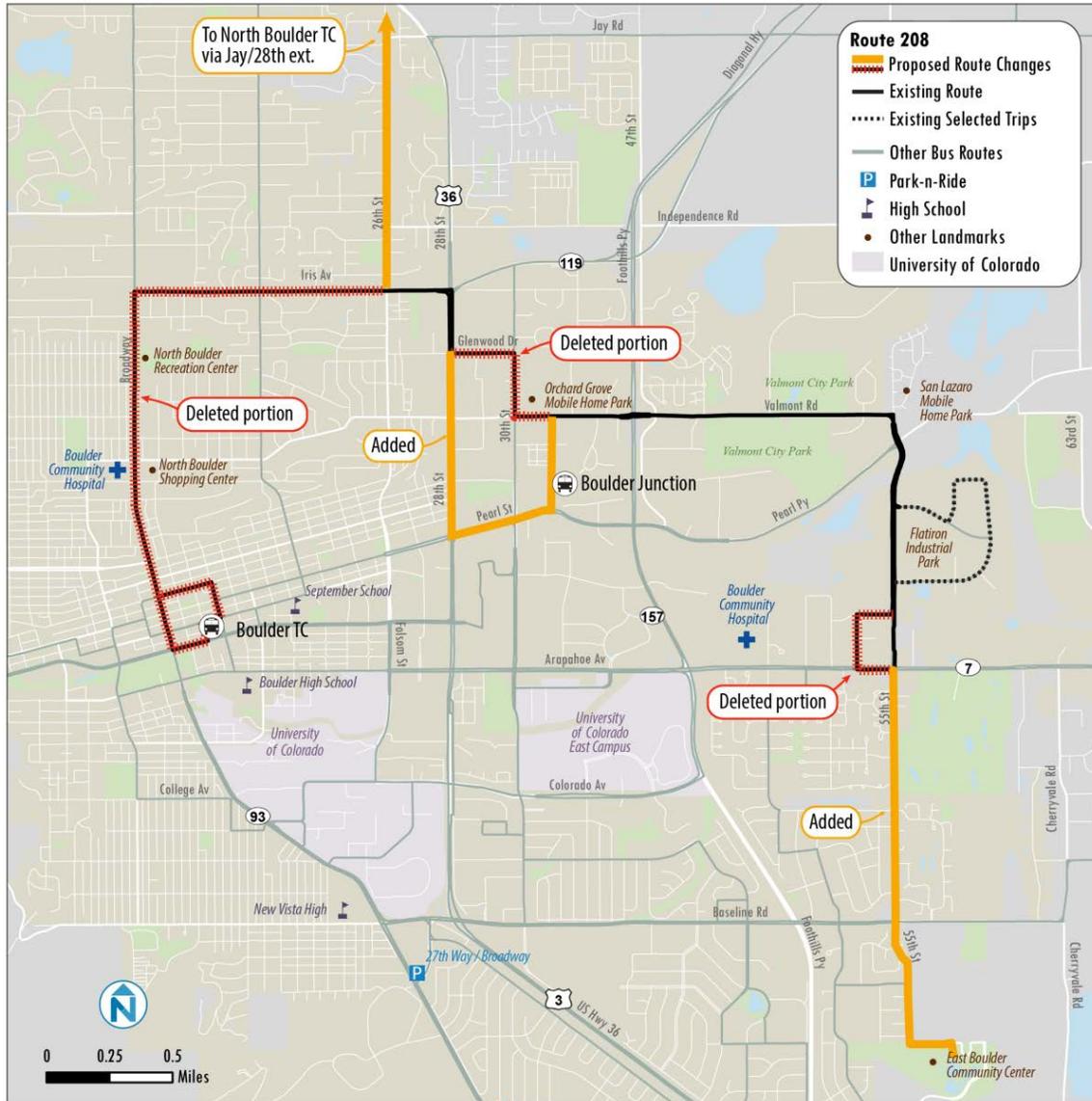


Figure C-14 Option to Modify Route 208



ISSUE AREA: INTER-REGIONAL SERVICES

Overview

Problem Statement

This effort is being led by Boulder County and supported by the City of Boulder. As such the level of effort is less than some of the other strategies but no less important in terms of the precedent it establishes for the long-term. The proposal as it currently exists is to extend some number of existing peak-hour trips on the Transfort “FLEX” route between Fort Collins and Longmont to provide a direct connection to Boulder. This would remove the need for someone to transfer from the FLEX route to the BOLT route. The FLEX route also serves intermediate destinations including Loveland and Berthoud.

Perhaps the most significant issue to be considered in this service expansion is which potential places in Boulder are likely to create the most ridership. Origin-destination data from existing vanpools that operate between Fort Collins and Boulder may indicate high-potential destinations. To assume that riders will need to transfer to get to their end destination in Boulder is to assume there will be less market for this service. A rule of thumb is that the market decreases by half when a transfer is introduced. This suggests that the destinations be carefully considered, sorted, and prioritized based on market size and ease of transfer (i.e., Does the transfer involve a frequent route that is more attractive or an infrequent route that is less attractive?).

This is an important first step to creating a transit market for a substantial in-commute origin. If successful, this service will almost certainly lead to further expansion and opportunities to capture in-commute trips on transit. However, it is essential that initial implementation of the service is successful in attracting riders (considering lessons learned from the LEAP, careful attention to the potential market for the service and where the service goes in Boulder will be as important as having the service to begin with).

Implementation/Next Steps

1. A survey of people who currently transfer from the FLEX to the BOLT will provide data on potential destinations in Boulder as will a survey of vanpool riders currently making the trip from Fort Collins to Boulder. (Summer 2014)
2. Pay careful attention to where the FLEX stops in Boulder and avoid the temptation to try to make it serve too many destinations; serving every potential location in Boulder will only make the service less attractive. (Summer 2014)
3. Build a matrix of destinations that prioritizes market size, then ease of access. Select stop locations from that matrix. Typical substantial errors made in starting long distance services are trying to make them serve too many markets and basing the route destinations on perception rather than actual market information. (Summer 2014)

ISSUE AREA: FILLING FREQUENCY GAPS

Overview

A number of routes within Boulder, both CTN and non-CTN routes, have gaps in frequency and span of service that detract from their usefulness as part of the overall transit network. All the routes listed below either are or are planned to be in the future CTN and should therefore have frequency and span of service that match CTN service design principles or that begin to put these routes in a position to become part of the CTN. The concept presented in this section is to improve the mobility provided by each of these routes by making them more available for network transit travel. In all cases, these routes are well within or exceed RTD performance standards; this allows some fall off in productivity resulting from the addition of edge-of-day services. Also, with one exception, none of these additions are large-scale. Rather, they focus on frequency and span gaps.

One of the necessary issues will be establishing a partnership arrangement with RTD to address these gaps. In most cases these are additions to non-peak services in recognition of capacity limitations at the RTD Boulder garage. In other words, the ability to add more service in peak periods is very limited. In 2016 this issue may find some relief or may be exacerbated as the US 36 BRT is implemented. The issues listed below are intended to be addressed prior to reaching a full understanding of the Boulder Operating Base capacity issue. From a financial perspective Boulder has limited resources to simply pay RTD to implement these changes. The envisioned process is a discussion between partners about leveraging the funds of each to achieve the desired goal of all routes in Boulder meeting the service design standards.

The following tables provide prioritized tiers which were determined based on a combination of three criteria:

- Is the route is currently part of the CTN?
- Does the route serve a corridor targeted for improvement in the TMP Renewed Vision for Transit?
- Estimated cost for each new projected rider gained (lower cost per new rider = higher priority)

The criteria were combined to form a single score, and the scores were divided into three priority tiers that imply an order of importance and an order of implementation. The service additions are summarized in the tables below by their respective tiers of priority.

Figure C-15 Tier 1 Proposed Improvements

Route/Service	Tier 1 – Highest Priority (January 2015)	
	Route 208	Bound
Average Weekday Ridership / Passengers per In-Service Hour	700 / 27.9	1,800 / 41.1
Average Saturday Ridership / Passengers per In-Service Hour	200 / 24.2	1,200 / 48.7
Average Sunday Ridership / Passengers per In-Service Hour	No Sunday Service	660 / 55
Proposed Improvements	Extend evening service on weekdays and Saturdays Add Sunday Service	Increase Saturday frequency to 15 min. between 9:15 a.m. and 6:15 p.m.
Reason for Improvements	Likely to be next CTN route with Boulder Junction development Evening service expansion will make service consistent with design guidelines Serves lowest income area in Boulder (Title VI)	Route is doing well in ridership and productivity (highest tier of productivity within RTD system) Route needs this level of service to be consistent with CTN guidelines
Estimated New Daily Rides	40 (weekday) 24 (Saturday) 165 (Sunday)	200 (Saturday)
Estimated Annualized Cost (annual cost / cost per new rider)	\$97,000/\$9.50 (Weekday) \$10,000/\$7.92 (Saturday) \$61,000/\$6.33 (Sunday)	\$50,000/\$4.75 (Saturday)

Figure C-16 Tier 2 Proposed Improvements

Route/Service	Tier 2: More expensive and needs more planning time (Late 2015/early 2016)		
	Bolt	Bound	Skip
Average Weekday Ridership / Passengers per In-Service Hour	1700 / 23.6	1,800 / 41.1	6,000 / 53.0
Average Saturday Ridership / Passengers per In-Service Hour	430 / 13.7	1,200 / 48.7	3,000 / 46.2
Average Sunday Ridership / Passengers per In-Service Hour	80 / 2.8	660 / 55	2,200 / 46.3

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	Tier 2: More expensive and needs more planning time (Late 2015/early 2016)		
Route/Service	Bolt	Bound	Skip
Proposed Improvements	<ul style="list-style-type: none"> Increase Saturday frequency to 30 min. between 9:30 a.m. and 5:30 p.m. 	<ul style="list-style-type: none"> Increase weekday frequency to 10 min. between 7:00 a.m. and 6:00 p.m. Weekdays: extend 15 min. frequency in the evening until 9:15 p.m. 	<ul style="list-style-type: none"> Weekdays: increase frequency to 15 min. frequency in the evening from 10:30 p.m. to 12:15 a.m. Sunday: begin 15 min. service one hour earlier at 9:24 a.m. and extend one hour later until 8:27 p.m.
Reason for Improvements	<ul style="list-style-type: none"> Route is doing well in both ridership and productivity As a future BRT, Boulder to Longmont connection needs to build ridership market to 7 days/week Route needs this level of service to be consistent with CTN guidelines 	<ul style="list-style-type: none"> Route is doing well in both ridership and productivity and is, consistently, in highest tier of productivity within the RTD system Route needs this level of service to be consistent with CTN guidelines 	<ul style="list-style-type: none"> Route is doing well in both ridership and productivity and is consistently in highest tier of productivity within the RTD system, including weekends. Route needs this level of service to be consistent with CTN guidelines Continued development and ridership in the edges of current busy periods are key to expanding ridership, overall.
Estimated New Daily Rides	176 (Saturday)	300 (Weekday – base frequency increase) 30 (Weekday – evening frequency improvement)	150 (Weekday) 180 (Sunday)
Estimated Annualized Cost (annual cost / cost per new rider)	\$79,000/\$8.64	\$291,000/\$3.80 (Weekday – base frequency increase) \$49,000/\$6.33 (Weekday – evening frequency improvement)	\$242,000/\$6.33 (Weekday) \$45,000/\$5.28 (Sunday)

Figure C-17 Tier 3 Proposed Improvements

Tier 3: Need more time to understand development on BRT corridors, higher cost, lower returns (Late 2016)		
Route/Service	Bolt	Dash
Average Weekday Ridership / Passengers per In-Service Hour	1700 / 23.6	2,900 / 38.6
Average Saturday Ridership / Passengers per In-Service Hour	430 / 13.7	670 / 18.8
Average Sunday Ridership / Passengers per In-Service Hour	80 / 2.8	600 / 30.5
Proposed Improvements	<ul style="list-style-type: none"> Weekdays: increase evening frequency to 20 min. until 9:40 p.m. 	<ul style="list-style-type: none"> Weekdays: extend 15 min. service in post-PM peak to 7:00 p.m. Saturday: extend 30 min. service to 9:00 p.m. Sunday: 30 min. service from 9:30 a.m. to 6:30 p.m.
Reason for Improvements	<ul style="list-style-type: none"> Route is doing well in both ridership and productivity As a future BRT, Boulder to Longmont connection needs to build ridership market to 7 days per week Route needs this level of service to be consistent with CTN guidelines 	<ul style="list-style-type: none"> Route is doing well in ridership and productivity As a further BRT, Boulder to Lewisville connection needs to build ridership Route needs this level of service to be consistent with CTN guidelines Lower tier as much of this route is outside Boulder and needs strong partnership with Boulder County and Louisville to implement the improvements. This may be step one in establishing BRT on South Boulder Road
Estimated New Daily Rides	36 (Weekday)	60 (Weekday) 36 (Saturday) 100 (Sunday)
Estimated Annualized Cost (annual cost / cost per new rider)	\$97,000/\$10.56 (Weekday)	\$97,000/\$6.33 (Weekday) \$20,000/\$10.56 (Saturday) \$99,000/\$17.10 (Sunday)

Implementation/Next Steps

1. Refine the cost and ridership projections and potentially re-order the priority. (Summer 2014)
2. Meet with RTD to understand their position on these changes. (Fall 2014)
3. Consider the possibility of using partnerships to advance the highest priority improvements. (Fall 2014)
4. Agree with RTD on a path forward to close these gaps in service. (Fall 2014)