

Corridor Plan Issues and Opportunities

While the development of a Mason Street Transportation Corridor represents an excellent opportunity to improve mobility throughout the city's urban core, the community raised a number of issues regarding the corridor development. A clear understanding of these issues and an understanding of the opportunities was an important prerequisite to the development of a conceptual plan for the corridor. The categories of issues raised included:

1. Transit Service and Location
2. Pedestrian Facilities and Connections
3. Design of Bicycle Facilities
4. BNSF Railway Operations
5. Automobile Interaction
6. Urban Design
7. Land Use Compatibility
8. Environmental Impacts
9. Projected Construction and Operating Costs

These issues were defined and responses



The BNSF Railroad and adjacent right-of-way offer a unique opportunity to integrate a linear transportation corridor with neighborhoods and businesses.

prepared as part of the alternatives development process.

Transit Service and Location

Station Location and Spacing—*How many stations should be constructed, where should they be located, and how closely should they be spaced?*

Closely spaced stations can increase convenience, accessibility, and connections to existing neighborhoods and activity centers, but more stations and more transit stops slow down overall travel time.

Station Design—*What will the physical interface with the transit option look like?*

Entry to an elevated track, a train station platform, or a street level entrance

to a bus or trolley option will each pose unique station design challenges and may influence the ease of access. The station design will need to accommodate seating, weather protection and have an aesthetic attraction for the Corridor.

Transit Travel Time—*Will a transit option for the corridor be faster than auto travel?*

Reduced transit travel time is likely to have a significant positive impact on use of and demand for the transit option.

Local and Regional Connections—*Can users connect to circulator transit service or a regional transit service?*

The availability of a connection to existing and future transit networks is likely to affect demand for transit in the Corridor since many transit riders will want to extend their trip beyond the corridor.

Reliable Technology—*Should transit solutions consider new technologies?*

Transit options that have been successfully implemented in similar cities and corridors utilize transit modes that offer proven technology to avoid risk both financially and operationally.

Physical Constraints—*Can the transit option physically work in the space available?*

Horizontal and vertical space requirements, grade separation requirements, turning radii, and right-of-way requirements for each option may dramatically affect the feasibility of a particular option. With a BNSF right-of-way of 100 feet, and a 15-foot easement required on one side and 20-foot easement on the other side, the window available is a corridor of 30 and 35 feet. Transit, bicycle, and pedestrian facilities can be accommodated within this corridor.

Frequency of Service—*What is the frequency of service—every 10 minutes, 15 minutes, 20 minutes?*

High frequency service is more attractive to users, but it also requires more demand to be cost effective. The alternatives analysis will need to balance the frequency with operating costs.

Expandability—*Is the transit option expandable or easily replaced with a higher capacity option if demand increases?*

The relationship between demand and attractiveness is complex and likely to change over time. A flexible and expandable option can better accommodate changes in demand over time.

Safety and Comfort—*Will the transit be safe, secure, and clean?*



The Corridor should provide for pedestrian continuity with adjacent activity centers.

Comfort and a perception of safety and security, both in the stations and in the train or bus, are frequently cited in a traveler's initial decision to use transit and will be an important element of the design for the Mason Street Transportation Corridor.

Pedestrian Facilities and Connections

Directness and Continuity—*Are there direct, continuous connections for pedestrians?*

Pedestrians are concerned about direct routes with minimal interruptions, both for safety and convenience. There are



Safe pedestrian street crossing with median refuge islands.

key connections that are not currently available that should be facilitated as part of this plan or a subsequent plan.

Convenience and Distance—*Do pedestrian pathways provide convenient, easy walking distance connections to surrounding neighborhoods and businesses?*

Pathways connecting the corridor to activity centers that are within easy walking distance are essential.

User Conflicts—*How do pedestrians interact with other users in the corridor?*

Separate paths minimize conflicts be-

tween users, especially between bicyclists and pedestrians, but they also require more space in the corridor.

Safety and Security—*Is the walking environment safe and secure?*

Pedestrians are concerned about both accidents with bicycles, transit and motor vehicles as well as criminal activity in the corridor. Safety can be addressed through a sound engineering design. Security is addressed through activity and design features such as lighting and line of sight visibility.



Places along the Corridor to park and lock bicycles.

Design of Bicycle Facilities

Travel Time—*Is the route faster for cyclists than other alternatives?*

Convenient access to the corridor and priority or grade separation at intersections will improve travel times for cyclists as compared to alternative routes, which are virtually nonexistent.

User Conflicts—*How will cyclists interact with pedestrians and transit in the corridor?*

Separate paths will allow for faster travel times and minimize conflicts with pedestrians and other users.

Intersection Priority—*Will cyclists be given priority at intersections?*

The type of interaction with motor vehicles at intersections, especially east-west traffic, will affect both safety and travel time in the corridor for cyclists. Grade separations at the major arteri-



Activity nodes along the Corridor will serve multiple transportation modes.

als will both improve bicycle safety and not cause any delay for east-west vehicular traffic. These types of under crossings also have a higher cost than conventional signalized intersection crossings.

Facility Design—*Are the bicycle facilities appropriate for both inexperienced and experienced cyclists?*

Facilities should be designed with both experienced commuter cyclists as well as younger, less experienced, and recre-

ational cyclists in mind.

Safety—*Is the cycling environment safe?*

Cyclists are concerned about accidents with transit, motor vehicles, and pedestrians in the corridor. Separation of bicycle trails from arterial crossings and separation between bicycle trails and pedestrian trails will improve safety and reduce conflict.

BNSF Railway Operations

Interface Design—*Is the interface between the railroad with pedestrians, bicyclists and autos safe and attractive?*

Railroad crossings, grade separation, buffers, and barriers will be important issues as pedestrian, bicycle, and auto use increases in the corridor.

Relocation Options—*Could the trains be relocated?*

If the BNSF rail users could be relocated to another corridor, the cost, timing, and physical requirements would be well beyond the time frame of this corridor



Railroad, a part of Fort Collins.



The railroad affects east-west travel.

project. Even with potential relocation of the freight service, long term commuter rail service requires integration between local transit, bicycle and pedestrian needs, and rail operations.

User Interaction—*How will pedestrians and cyclists interact with railroad uses?*

The location and design of pedestrian and bicycle facilities relative to the railroad tracks will influence travel time, convenience, and attractiveness in the corridor. Barriers separating bicycles and pedestrians from rail operations will be important, as well as consolidation of safe east-west track crossings.

Automobile Interaction

East-West Crossings—*How will the corridor affect east-west crossings?*

At-grade pedestrian and bicycle crossings could lead to increased delays for motorists as they require a significant amount of signal time to cross these arterials. Grade separations for bicycles and pedestrians will eliminate the conflict with east-west arterial traffic. At-grade transit crossings, with minimal frequency and duration, will have a minor impact on east-west arterial travel.

Parking—*What kind of parking will be provided in the corridor?*

The amounts of parking, orientation, and space requirements are important design factors. In general, Park-N-Ride opportunities along the corridor to facilitate a wide range of users will be important for the overall plan.

Reduced Congestion—*Will the project actually reduce congestion in the corridor?*

Congestion currently exists along the College Avenue (US 287) corridor, in which there are already trips that divert to other north-south parallel routes such as Lemay Avenue and Shields Street. As the City of Fort Collins grows, the demand for the College Avenue corridor will further increase. Given that the capacity of College Avenue is finite, increased traffic will continue to divert to Lemay Avenue and Shields Street. With mobility alternatives including transit, bicycle, and pedestrian, any trips that will likely divert from automobiles currently utilizing the College Avenue corridor will likely be replaced by trips that have or will divert to Lemay Avenue and Shields Street.

In conclusion, actual reduction in traffic and congestion along College will likely not occur. However, overall reduction in congestion along the parallel routes of Lemay Avenue and Shields Street will occur. This improvement will also likely reduce overall travel time and vehicle miles of travel along congested routes.

Level of Service—*How will the corridor impact levels of service on the existing street network?*



Visually interesting and aesthetic streetscapes create community image.

Increased pedestrian, bicycle, and transit use could improve automobile levels of service on the existing street network by replacing auto trips with other modes of travel. This reduction will likely be greater along the parallel routes of Lemay Avenue and Shields Street as compared to College Avenue.

Reduced Vehicle Miles Traveled—*Do the corridor improvements reduce Vehicle Miles Traveled (VMT) in the city?*

The corridor and associated uses should allow for more trips that do not require use of a motor vehicle and reduce vehicle miles of travel. While actual VMT is not likely to decrease given the magnitude of projected growth, the rate of growth may be slowed.

Travel Time—*Will the project reduce travel time for automobiles in the corridor?*

If congestion is reduced as some auto trips are replaced by walking, biking and transit trips, the travel time along the corridor for automobiles could be improved.



The Mason Street Transportation Corridor should integrate with new development such as the recently completed Larimer County Justice Center.

Urban Design

Attractive Design—*Is the design and landscaping attractive and inviting?*

A comfortable and enjoyable environment with attractive public spaces is especially important to pedestrians.

Historic Preservation—*Will historic structures be preserved and will new structures respect historic character?*

The Mason Street Transportation Corri-

dor should not just avoid impacts to historic structures, but be designed in a way to emphasize their importance.

Transitions between Travel Modes—*How will the travel modes and their associated facilities connect and interact?*

Convenient transitions to and from walking, biking, transit, and automobile modes are essential design elements.

Visual Impacts—*What kind of visual*

impacts will the transit choice have?

Elevated structures and electric lines may obstruct mountain views. Other transit choices may be particularly appealing or unobtrusive.

Social Interaction—*Does the design encourage walking and social interaction?*

Inviting gateway areas and comfortable, safe public spaces improve the pedestrian environment and allow for social interaction.

Corridor Alignment—*Will the corridor*



Mason Street serves multiple transportation modes, such as automobiles at the recently completed Civic Center Parking Structure

follow the Railroad for the entire corridor or will some facilities branch off in areas to CSU or the Foothills Fashion Mall?

Directness, convenience, and property acquisition requirements must all be balanced to select the best alignment in the corridor.

Land Use Compatibility

Business and Residential Impacts—*How will the corridor impact adjacent businesses and residential areas?*

Impacts to property values and increased or decreased business exposure and the associated economic impacts are significant concerns of adjacent property owners. Historically, property values significantly increase because of the added benefits of bicycle, pedestrian, and transit mobility.

Compatibility of Uses—*Are land uses in the corridor compatible with adjacent neighborhoods?*

Residents are concerned that land uses

in the corridor may not be compatible with the character of their neighborhoods. The bicycle/pedestrian components will have a lesser impact than the transit element. However the transit component will be nonpolluting quiet buses designed to not intrude on the environment.

Connections to Activity Centers—*How will the corridor provide connections to activity centers and districts?*

Direct, convenient connections to activ-

ity centers, the downtown district, community commercial districts, employment districts, the campus district, industrial districts, and the commercial corridor district along Mason Street are essential.

Transit Oriented Development—*Are there areas well suited to transit oriented development or redevelopment?*

Orienting new development and redevelopment in the corridor to the transit service could improve access to the cor-



The visual interest and aesthetics of the Larimer County Justice Center along the Corridor.

ridor and increase transit use in the corridor. There are a number of infill sites along the corridor as well as redevelopment opportunities.

Density Changes—*How will density along the corridor be addressed?*

Higher density development is typically required for some forms of transit, but some existing neighborhoods may resist policy changes to increase residential density along the corridor. On the other hand, it is possible to promote a transitional transit system that begins with one technology and service frequency that can later be upgraded to a higher technology with additional capacity, such as from bus to light rail.

Policy Changes—*Are changes to the zoning code appropriate?*

The City of Fort Collins Structure Plan and Land Use Code could be amended to support appropriate land uses in the corridor. This intensification could be done at little or no cost to the City, yet yield higher tax returns through increased intensity.

Environmental Impacts

Air Quality Improvements—*How will air quality be affected by the transit choice and reduced auto use in the corridor?*

The emissions reduction from decreased auto use and any air quality impacts associated with the transit mode need to be examined. Intuitively, reduced vehicle miles traveled will reduce emissions as compared to a no build alternative.



The north end of the Corridor connects with Lee Martinez Park.



Development continues along the Corridor.

Noise Levels—*How much noise will be associated with the transit choice?*

Current new bus technologies that utilize electric, compressed natural gas or liquefied natural gas are extremely noise free and will not have an impact on adjacent development.

Vegetation and Wildlife Impacts—*How will the development of the corridor impact wildlife and vegetation?*

Sensitivity to other species in the corridor and then habitat requirements, both in design and construction, is an important consideration.

Projected Construction and Operating Costs

Affordability—*Is the project affordable in terms of capital and operating costs?*

The design and construction costs associated with the Mason Street Transportation Corridor might qualify for New Start funding through the Federal Transit Agency. The current Building Community Choices could provide the 20 percent local match required for the FTA funding. Operating costs are the responsibility of the local jurisdictions and need to be examined when exploring alter-

native transit modes.

Property Acquisition—*How much will property acquisitions cost?*

Acquisition costs should be estimated in areas where private property must be acquired to construct the Corridor improvements. The projected need for property is minimal.

Transit Revenues—*What is the revenue potential of the transit choice?*

The fare prices and projected ridership should be examined to establish each transit alternative's revenue potential.

Financing Structure—*Who pays for the project, how, and when?*

New revenue sources such as Federal Transit Agency New Start funds can be complemented by local public and private funding options.

Related Plans and Policies—*How will the improvements proposed for the Mason Street Transportation Corridor relate to other local and regional plans and policies?*

- *Air Quality Policy Plan*—summarizes pertinent facts about air quality, establishes a community vision and measurable objectives, and sets forth specific policies to direct City programs and actions

(1993). In general, the alternative mode opportunities as proposed by the Mason Street Transportation Corridor will help contribute to reduced growth in vehicle miles of travel.

- *Downtown Civic Center Master Plan*—framework for future development in the 12-block Civic Center with zoning, acquisition, phasing, funding, and civic use recommendations (1996). This plan envisioned a multi-modal Mason Street Transportation Corridor to serve projected public and private sector growth in the downtown area.
- *Fort Collins Bicycle Program Plan*—guides development of a City bikeway program and facilities (1995). This plan specifically identifies the BNSF Railway corridor as a north-south bike route from downtown to south of Harmony Road.
- *Fort Collins Congestion Management Plan*—land use, transportation and air quality recommendations, with identification of activity centers (1995). Mason Street Transportation Corridor complements the Congestion Management Plan for alternative transportation modes with increased alternative mode levels of service as a trade-off to increased automobile congestion.
- *Master Street Plan*—designates the alignment and functional classification of major streets planned for construction within and in close proximity to the Urban Growth Area (1996). The Master Street Plan typical cross sections define bicycle facilities for all arterials. These facilities are necessary to accommodate east-west connections to the Mason Street Transportation Corridor.
- *Pedestrian Plan*—policies, design standards and guidelines for pedestrian facilities (1996). The Mason Street Transportation Corridor will provide for significant pedestrian linkages to provide continuity and directness per the Pedestrian Plan.
- *North Front Range Transportation Plan*—travel demand analysis, goals and objectives, including bicycle, transit, roadway, aviation, and rail systems. The Mason Street Transportation Corridor is included in the current Regional Transportation Plan. The Mason Street Transportation Corridor directly reflects the goal of the North Front Range Transportation Plan to reduce vehicle miles traveled and divert trips to alternative modes.
- *North Front Range Transportation Demand Management Program*—focuses on public and private strategies to reduce vehicle miles traveled throughout the North Front Range (1995). The direct benefit of the Mason Street Transportation Corridor is to provide the transit, bicycle, and pedestrian infrastructure to accommodate future diversion of trips to alternative modes.



New City building bring jobs and customers to downtown, many along the Corridor.