City of Louisville
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City Council

February 28, 2023
Packet Addendum #1

From:	Michael B. Menaker
To:	City Council
Subject:	Hwy 42
Date:	Friday, February 24, 2023 2:54:34 PM
Attachments:	42 Gateway Alternative Analysis 2013.pdf 42 Gateway SWOT.DOCX 3IP community mtg.pdf 42 Gateway Alternative Analysis 2013.pdf Louisville's Highway 42 envisioned as smaller, more 'livable' corridor – Boulder Daily Camera.webarchive

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Mayor and Council,

One of the most frustrating things to a long-time observer and participant in City government and planning
is the loss of institutional memory…and the resulting reinvention of the wheel. Over and over again.

In 2012, after extensive public outreach and process, including waling tours, public "vision" meetings, LRC meetings,
consultants studies and more; the City defined its goals for Hwy 42 thusly:

"Louisville Planning Director Troy Russ said the emphasis in the preferred design of Colo. 42 — which would pick up a middle turn lane in addition to other traffic flow improvements — is being put on "livability" in the corridor over pure mobility through it."

My first question would be "What changed?"

Five traffic lanes were rejected in favor of three, signals envisioned at most intersections and the emphasis was placed on making Hwy 42 work for Louisville, not the pass through traffic.
At the tine the difference in travel time along Louisville's section of Hwy 42 from 5 lanes to 3 was calculated at 21 seconds.

Extensive plans and diagrams were created…and yet, now, we once again seem to be reinventing the wheel.
It would serve Louisville if, before making further decisions, Council and Staff made a concerted effort to review the work done in the past.
And, extract from that lessons and conclusions, still applicable today.

While the old City website the42gateway.com is no longer active, surely the contents were archived and can be revisited.

To start things off, I attach some key documents from my personal files.
It would be shameful to wast all the work, time, and treasure it took to create these and more.
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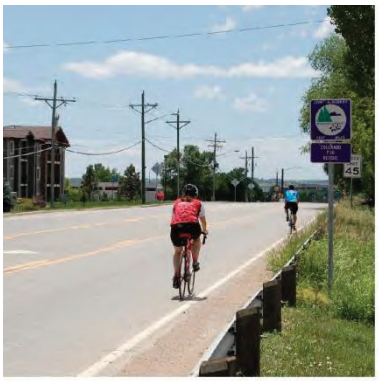
42 Gateway

Alternative Analysis Report

June 2013






Prepared for:

City of Louisville
COLORADO • SINCE 1882

In Cooperation with:

Boulder County

RTD

DOT
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MIG

June 2013

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Executive Summary

The 42 Gateway Project is an infrastructure improvement study that seeks to influence the form, function, character, and accessibility of the Highway 42 Revitalization Area and Downtown Louisville. The Project was a joint effort between the City of Louisville (the City), Boulder County, the Regional Transportation District (RTD) and the Colorado Department of Transportation (CDOT). The study area included State Highway 42 (SH 42) from Lock Street to Paschal Drive and a connection between Downtown Louisville crossing the Burlington Northern Santa Fe (BNSF) railroad through the City's Revitalization District.

> *The purpose of the 42 Gateway project is to provide mobility and access for a broad range of ages and abilities within and through the study area by providing safe, convenient, and efficient multi-modal transportation infrastructure. The project will meet existing and future needs, support the implementation of adopted community plans, reflect both the urban and rural character of the area, ensure an environment for life, work and play as well as create a Louisville gateway.*

The Project recommends completing SH 42 as a context sensitive, multi-modal, three-lane highway which is supported by enhanced local street network connections. Together, the preferred highway alternative and local network enhancements provide a community and stakeholder accepted solution which accommodates 20-year traffic forecasts, addresses business and neighborhood accessibility needs, mitigates roadway safety concerns, and resolves multi-modal deficiencies currently present along the corridor. The preferred alternative offers solutions for all modes of travel while supporting the future land use expectations of the City's redevelopment district and strengthens the livability of the surrounding neighborhoods. The complete package of improvements is based on extensive technical analysis, stakeholder feedback, and community input. The decision-making process that influenced these recommendations is provided throughout this report.

The Project also advances the design of the ~~G~~Gateway" for the Northwest Rail Corridor to the City of Louisville. The pedestrian underpass also connects downtown Louisville to the City's Revitalization District. This study identifies the physical constraints present at the Gateway location and recommends a feasible solution to these constraints. The recommended underpass is based on extensive coordination with the BNSF railroad and community interests. The underpass design and submittal to the railroad is presented later in this report.

The improvements recommended as a part of this Project provide guidance on the needed infrastructure to promote redevelopment in the City's Revitalization District. However, implementation of the recommended improvements will be based upon approval from City Council and available funding.

Introduction

The City of Louisville, in partnership with Boulder County, RTD and CDOT have partnered to improve the SH 42 corridor and the City's revitalization district, both for Louisville's citizens and business owners, and to address regional transportation needs. These improvements include pedestrian and bicycle facilities, transit accommodations, roadway network enhancements, corridor improvements, and intersection modifications.

The study adheres to the Colorado Department of Transportation (CDOT) Planning and Environmental Linkages (PEL) process. In this way, this project meets the standards established by National Environmental Policy Act (NEPA) and can serve as a predecessor to a NEPA level analysis which is necessary for maintaining Federal Funding eligibility. The report documents the decision-making process and alternatives analysis that were undergone by stakeholders in order to arrive at a preferred alternative for SH 42 and the City's Gateway pedestrian underpass.

Project Overview

The City developed the *42 Gateway Plan* as an integrated infrastructure implementation plan to advance the planning, stakeholder involvement, public outreach, and preliminary engineering of *Highway 42 Revitalization Area Comprehensive Plan Amendment*. The two areas of infrastructure focus were:

- A South Street connection between downtown Louisville and the City's revitalization district, crossing under the BNSF Railway right of way and creating a multi-modal connection to the proposed RTD's Northwest Commuter Rail station and providing a regional bicycle and pedestrian connection between the Goodhue Ditch Trail and the Coal Creek Trail; and

- A context sensitive and multi-modal corridor design and implementation plan for SH 42 between Lock Street and Paschal Drive (the northern city limits).

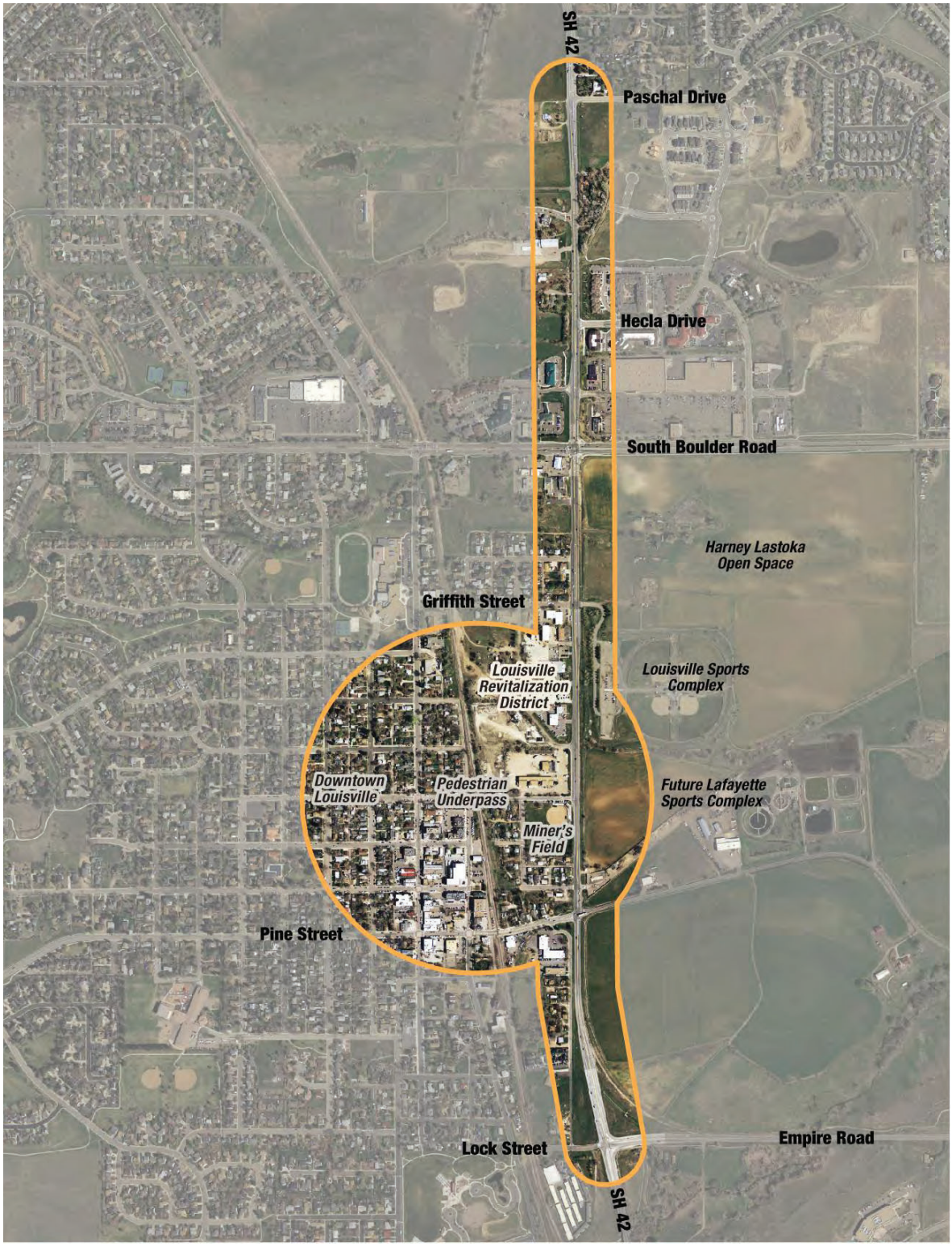
Highway 42 Revitalization Area Comprehensive Plan Amendment

The Louisville City Council initiated the *Highway 42 Revitalization Area Comprehensive Plan Amendment* in 2000 to consider possible changes in the area bounded on the north by South Boulder Road, on the south by Pine Street, on the west by the BNSF Railway tracks, and on the east by SH 42. The plan recommended that this area redevelop over time as a mixed-use, transit-oriented neighborhood that functions as an extension of downtown. The plan included the Gateway pedestrian underpass, medium- to high-density residential projects, and a mix of shopping, restaurants, offices, and so on, as a part of the revitalization district. The plan identified the existing neighborhoods in the revitalization district and stated that they would be preserved and strengthened. The Louisville City Council adopted the *Highway 42 Revitalization Area Comprehensive Plan Amendment* in 2003. The City codified the Amendment through the adoption of new zoning and design guidelines in Section 17.14 in the Louisville Municipal Code (LMC) in 2007. The *42 Gateway Plan* is the next step in implementing the recommendations of the *Highway 42 Revitalization Area Comprehensive Plan Amendment*.

Study Area

The study area for the project includes all land within a quarter mile of the proposed RTD's Northwest Commuter Rail Louisville station platform, as well as all the area within 300 feet of SH 42 right of way between Lock Street and Paschal Drive.

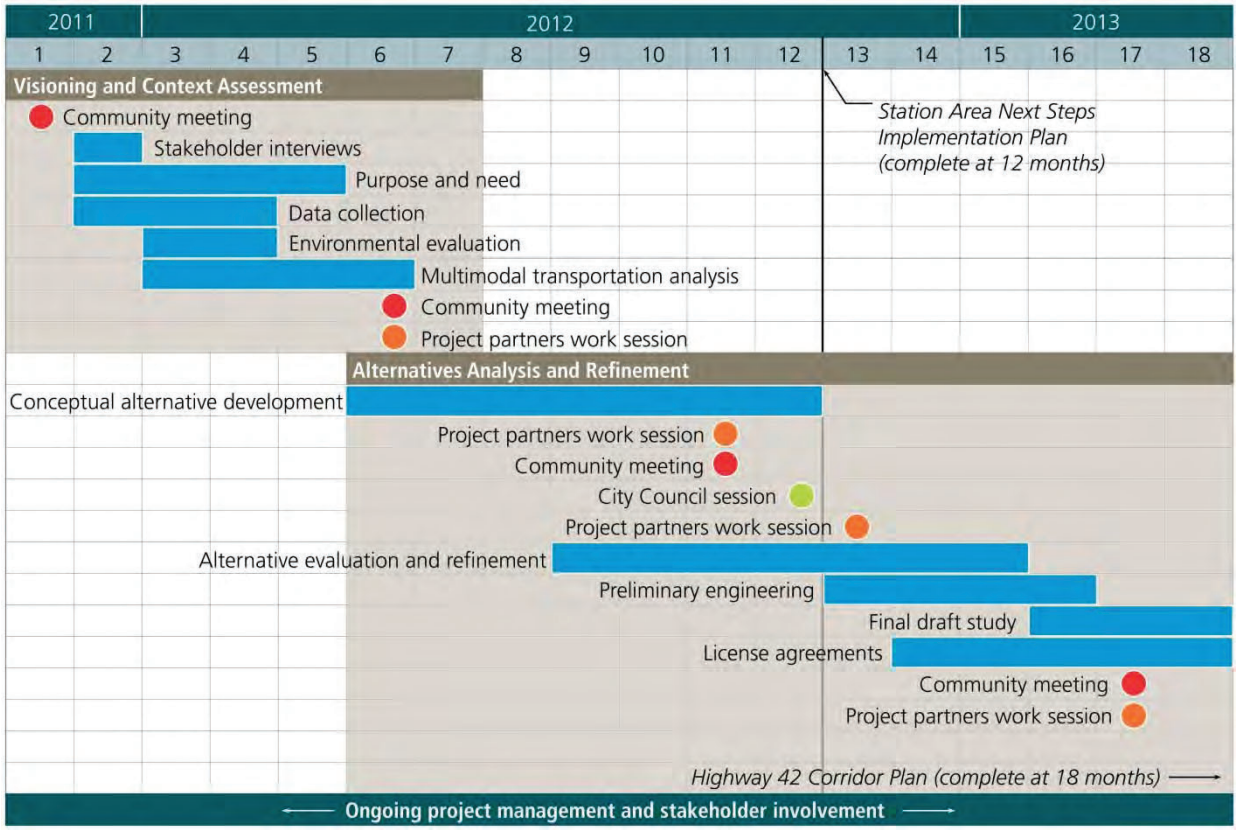
Figure 1. Project Study Area



Timeline

The SH 42 corridor portion of the project was completed within an 18-month timeline and the underpass was completed in 12 months. Both projects started early in November 2011. Figure 2 shows the major milestones of the project.

Figure 2. Project Timeline



Funding

Funding for the study was provided by the City, CDOT, Funding Advancement for Surface Transportation & Economic Recovery (FASTER) funds, RTD, Federal Congestion Mitigation Air Quality Grant (CMAQ), and Boulder County transportation funds.

Collaborative Decision Making and Stakeholder Involvement

Agency coordination was a fundamental part of the advancement of this project. The decision-making process involved several agencies and stakeholders working collaboratively to achieve consensus on the major decisions.

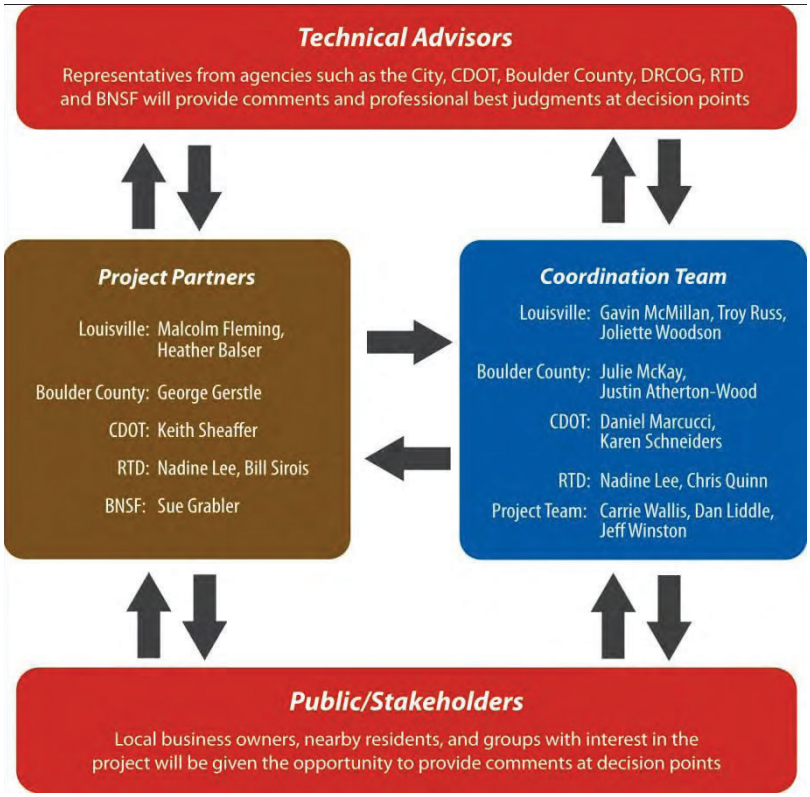
Consensus

Consensus is defined as an agreement built by identifying and exploring the interests of all parties and assembling a composite agreement that demonstrates these varied interests have been satisfied to the greatest extent possible. Consensus was reached when all parties agreed that their major interests had been taken into consideration and addressed in a satisfactory manner. The following agencies were represented in the consensus process:

- City of Louisville
- CDOT
- Boulder County
- RTD
- BNSF Railway

The evaluation and decision-making process occurred at two levels: the coordination team and the project partners. This type of evaluation and decision-making process gave the project a high level of transparency, understanding, and provided many opportunities for stakeholders to help provide input on the alternatives. Those who participated in the evaluation and decision-making process are shown in Figure 3.

Figure 3. Collaborative Evaluation and Decision Making



Coordination Team

The coordination team supported the collaborative process by overseeing the day-to-day progress of the project and ensuring that the project partners' decisions were incorporated into relevant products. Coordination meetings were generally used as working sessions to raise questions, make decisions, and ensure that progress was in-line with the project goals and objectives. Specific discipline representatives, known as technical advisors, were invited to specific coordination meetings as needed in the process. The coordination team met approximately on a monthly basis throughout the evaluation and decision-making process.

Project Partners

The project partners supported the collaborative process by providing input and making decisions at key points in the project. Each organization was invited to appoint one representative who could speak for their agency. These representatives made key decisions on behalf of their agencies and served as a liaison to their respective agency for this project. Participating members of this group were asked to meet the following requirements for participation:

- Able to represent the breadth of views of their constituency, rather than just representing their personal views.
- Are empowered as decision makers within their organizations or constituencies or otherwise able to commit and bind their constituencies to any agreements of the committee.
- Are familiar with the proposed RTD/Louisville station and underpass area, as well as SH 42 between Lock Street and Paschal Drive and the range of issues associated with these locations.
- Able to be a diplomat—all members should be proactive about seeking areas of agreement and should look for mutually beneficial solutions.
- Able to commit the time necessary to attend at least four meetings during the project, with the understanding that additional meetings may be added if other key decisions arise, and to prepare in advance for each meeting by examining supporting information and materials.

Given the variety of stakeholders, effective decision making was essential to advancing the project. The consultant design team facilitated the process, helped negotiate the technical hurdles, and coordinated the agencies involved. Table 1 lists all meetings held during the decision-making process.

Table 1. Schedule of Major Meetings

Date	Meeting	Main Topics
11/9/2011	Kick-off Coordination Meeting, Walking Audit	Project introduction; schedule
11/9/2011	Community Meeting	Project introduction; schedule
12/12/2011	Strengths, Weaknesses, Opportunities, and Threats (SWOT) Meeting with Louisville Revitalization Commission (LRC)	SWOT analysis
12/14/2011	Coordination Meeting	Data collection and analysis
12/15/2011	SWOT Meeting with Boulder	SWOT analysis
12/15/2011	SWOT Meeting with Lafayette	SWOT analysis
12/16/2011	SWOT Meeting with Property Owners	SWOT analysis

Table 1. Schedule of Major Meetings

Date	Meeting	Main Topics
1/5/2012	SWOT Meeting with CDOT	SWOT analysis
1/18/2012	Coordination Meeting	Review of SWOT results; draft purpose and goals
1/24/2012	SWOT Meeting with RTD	SWOT analysis
2/15/2012	Coordination Meeting	Finalize purpose and goals; discuss alternatives development
3/21/2012	Coordination Meeting	Existing and design year traffic conditions; underpass design requirements and constraints
4/4/2012	BNSF Meeting	Underpass requirements
4/18/2012	Project Partner Work Session	History of corridor and redevelopment area; purpose and goals; traffic volume forecasts
4/19/2012	Community Meeting	Purpose and goals
6/20/2012	Coordination Meeting	Corridor and intersection alternatives
7/16/2012	Interim Meeting with RTD	Station area and platforms
7/17/2012	Access Meeting with CDOT	Alternatives and SH 42 access
8/13/2012	Paschal Drive Meeting with City of Lafayette	Paschal Drive IGA
8/22/2012	Coordination Meeting	Underpass alternatives refinement; highway alternatives and screening process
9/6/2012	LRC Presentation	Underpass design, highway alternatives
9/26/2012	Project Partner Work Session	Underpass alternatives refinement; highway alternatives and screening process
10/3/2012	Community Meeting	Underpass and highway alternatives
11/27/2012	Community Meeting	Underpass and highway alternatives
12/04/2012	City Council Study Session	Review of project
12/18/2012	City Council Regular Meeting	Decision: to support the base alternative for SH 42 and the South Street Gateway

As seen in Table 1, the process slowed after the initial public kickoff meeting to gather data (traffic counts, physical surveys, right-of-way boundaries, etc.) and prepare base mapping and traffic simulations that facilitated the development of feasible alternatives. Meeting agendas are provided in Appendix A.

Walking Audit

To gain an in-depth understanding of the study area conditions, the project team conducted a walking audit with the engaged stakeholders. The walking audit involved walking from Pine Street along SH 42 to Hecla Drive and observing the existing conditions. The group was asked to review the physical conditions of the corridor in relationship to the six principles of a walkable community (accessible, comfortable, convenient, connected, engaging, and vibrant). The group was encouraged to look at all conditions, good and bad, and to turn these findings into solutions as the 42 Gateway Project proceeded to alternative analysis. The Walking Audit materials are provided in Appendix B.

Coordination team members participating in the walking audit along SH 42

Strengths, Weaknesses, Opportunities, and Threats Analysis

As a first step, and to identify areas of convergent and divergent opinions between the stakeholder groups, various stakeholders participated in a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis. A SWOT analysis is a workshop tool commonly used to identify factors that are supportive or unfavorable to achieving a specific objective.

The SWOT process itself is straight forward and lends itself to short, in-person workshops. Workshop participants are asked to identify strengths, weaknesses, opportunities, and threats as defined in Table 2 and in the context of the agreed upon objective statement. Factors surrounding the achievement of the objective statement are discussed, and placed into one of the four SWOT categories based on if they are external or internal (internal meaning within an agency's control and external being outside an agency's control) factors and whether or not the factors are positive or negative towards achieving the specified objective.

Table 2. Strengths, Weaknesses, Opportunities, and Threats

Strengths (positive internal factors)	**Weaknesses (negative internal factors)**
Factors and views held by the organization that further or support the project	Factors and views held by the organization that could hinder the project
Opportunities (positive external factors)	**Threats (negative external factors)**
Factors outside of the organization's control that further the project	Factors outside of the organization's control that hinder the project

The following agencies engaged with the project team in a SWOT analysis workshop: the City, the Louisville Revitalization Commission (LRC), Boulder County, City of Lafayette, local property owners, CDOT, and RTD. The main topics and points of conversation are summarized in Figure 4. For a complete summary of SWOT results, see Appendix C.

Figure 4. SWOT Word Cloud

Project Purpose

Commonalities among the agencies identified through the SWOT process were used as a springboard for defining the project's purpose and need statement, developing goals and objectives for the highway and the underpass, and guiding the project in a direction that was mutually agreeable and built on consensus. The divergent viewpoints documented during the SWOT analysis were used in alternatives evaluation to help establish constraints, measures of success, and relevant screening criteria.

The following purpose and need statement was established based on SWOT analyses; stakeholder input; discussion at the coordination meeting held on February 15, 2012; discussion at the project partner work session on April 18, 2012;and the Community Meeting held on April 19, 2012:

> *The 42 Gateway Project is an infrastructure improvement study that will influence the form, function, character, and accessibility of the SH 42 Revitalization Area and Downtown Louisville. The study area includes SH 42 from Lock Street to Paschal Drive and a connection between Downtown Louisville and the proposed RTD station through the Revitalization District across the Burlington Northern Santa Fe railroad.*
>
> *The purpose of the 42 Gateway project is to provide mobility and access for a broad range of ages and abilities within and through the study area by providing safe, convenient, and efficient multi-modal transportation infrastructure. The project will meet existing and future needs, support the implementation of adopted community plans, reflect both the urban and rural character of the area, and ensure a quality environment to live, work and play, as well as be showcased as an important gateway to Louisville.*

In addition to the project purpose, the coordination team developed a specific set of goals for the highway and a specific set of goals for the underpass.

Goals for SH 42

The following goals were developed for SH 42:

- Develop state, regional, and local partnerships to work cooperatively with all stakeholders to identify the preferred alternative
- Provide safe and convenient facilities for users of all ages and mobility levels
- Create a livable and distinctive place that invites users into downtown Louisville and announces the revitalization area
- Develop solutions that are sensitive to the context of the surrounding land uses
- Provide a supportive transportation system that enables urban revitalization and encourages private investment
- Provide safe and efficient access in strategic locations for proposed land uses
- Maximize opportunities for design features that appropriately reflect the context of the corridor
- Balance regional mobility and community livability
- Accommodate future regional transit plans
- Consider and balance the impacts upon natural, social and cultural resources
- Promote regional trail connectivity within the study area
- Design sustainable solutions
- Develop creative, cost-effective, and implementable solutions for immediate and long-term needs
- Emphasize the safety of pedestrians and bicyclists crossing the highway

Goals for the Underpass

The following goals were developed for the underpass:

- Create a safe and inviting connection under the BNSF Railway tracks that builds upon the character of downtown Louisville
- Provide a supportive environment for urban revitalization and private investment
- Maximize opportunities for public art
- Accommodate future regional transit plans
- Consider and balance the impacts upon natural, social and cultural resources
- Develop creative, cost-effective, and implementable solutions for immediate and long-term needs

Community Meetings

Three Community Meetings were held at strategic points through the project. The first meetings was held on November 9, 2011, and introduced the public to the project and reiterate the City's adopted vision for the Revitalization District. The first meeting brought over 60 citizens and business owners to what was the beginning of a The 42 Gateway project. After a presentation on this project and a transportation planning overview, attendees were given the opportunity to answer some broad and open-ended questions about this project and the Louisville community. Some of the major comments include:

- Lower speeds on SH 42
- Bike paths or zones
- Sidewalk or trail on Hwy 42.
- SH 42 functions as a bypass now, allowing those just passing through to avoid the pedestrian areas. Unless there is a major road to replace SH 42 (nearby), this still seems like its most useful function, without it, would there be more auto traffic on Main Street?
- SH 42 south of South Boulder Road should not become US 287 between Arapahoe and South Boulder Road.
- A Louisville by-pass is not good for Louisville.
- If you slow people down as they pass thru Louisville, they are more inclined to stop and buy something.
- 45 MPH prevails on existing SH 42 thru Louisville and Lafayette. For the foreseeable future that should be adequate, but right of way should include provision of easement for 4 lanes.
- Balancing traffic flow with competing place making and people oriented design. Louisville is a great City. Let's keep fast moving cars out of equation.
- Through traffic can choose 287 or 36.

For a full summary of comments received, please visit http://www.the42gateway.com/project-work/kickoff-meeting-results/.

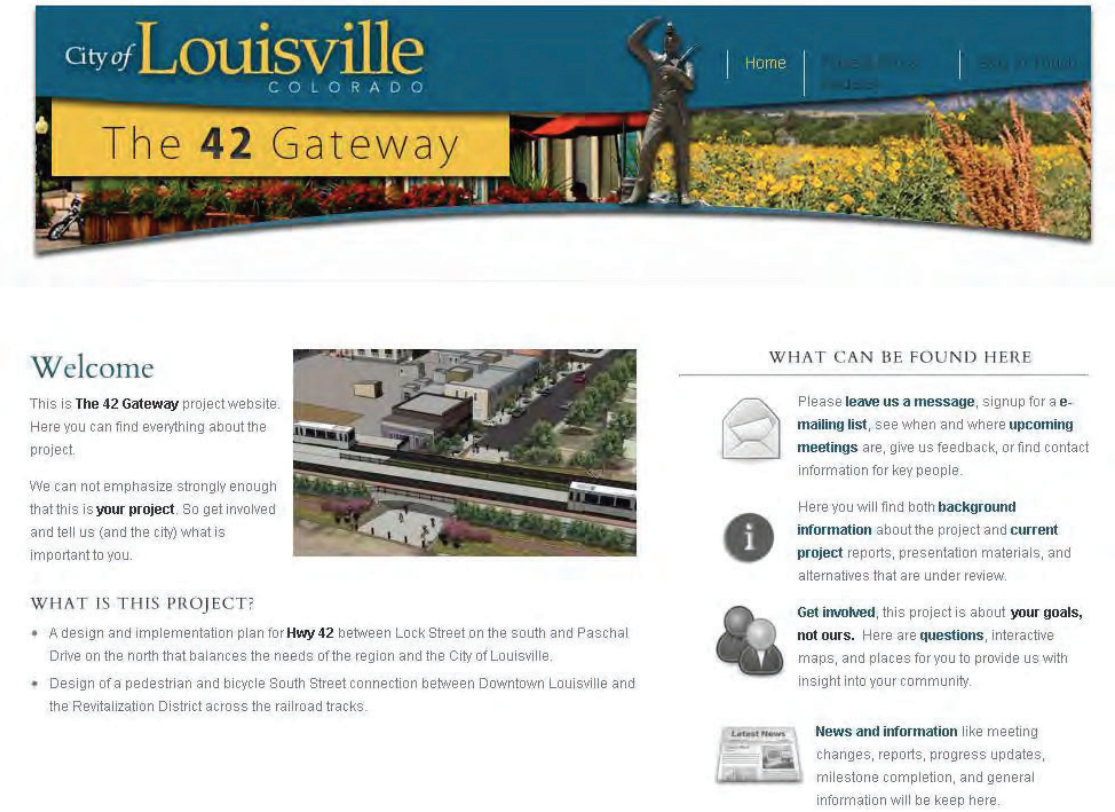
A second meeting was held on April 18, 2012, and generated good conversation and insight from community leaders and citizens regarding the project purpose, project goals and existing conditions. The results of the SWOT analysis were presented at this meeting. Attendees provided comments on the existing conditions and the project goals. Some of the major and reoccurring comments included:

- Please widen Highway 42 for bike and pedestrians.
- Slow down traffic in Highway 42.
- Spruce Street should be closed at Highway 42 for safety and to lessen cut through (right in, right out will still be a hazard)
- Why no sidewalk built here? It can still be added and should be.
- Please lower the speed limit.
- Add an inviting sign and encourage public use.

In general, the attendees expressed an interest to see the Highway 42 goals oriented towards making the highway a safer, more user friendly environment, particularly for bicycles and pedestrians.

The third community was held October 3, 2012, to present and discuss the project alternatives. After a presentation providing a project update and a review of transportation planning, attendees were given the opportunity to review the alternatives considered at each intersection. For the presentation and meeting materials, see Appendix A, Meeting Materials.

In addition to community meetings, the public was able to provide input at any time throughout the project via the project website, http://www.the42gateway.com/. Over the life of the project, many comments were received. Appendix L, Comments from Website, documents all of the comments received.



Highway Alternative Development and Analysis

The first technical step in the alternatives analysis process documented the existing conditions of all properties within 300 feet of SH 42 between Lock Street and Paschal Drive. Existing conditions include factors such as environmental conditions, traffic operations, and documentation of overall character. This section summarizes the existing conditions of the 42 Gateway Project. For a full summary, see Appendix D, Environmental Existing Conditions, and Appendix E, Future Traffic Volume Forecasts.

Existing Conditions

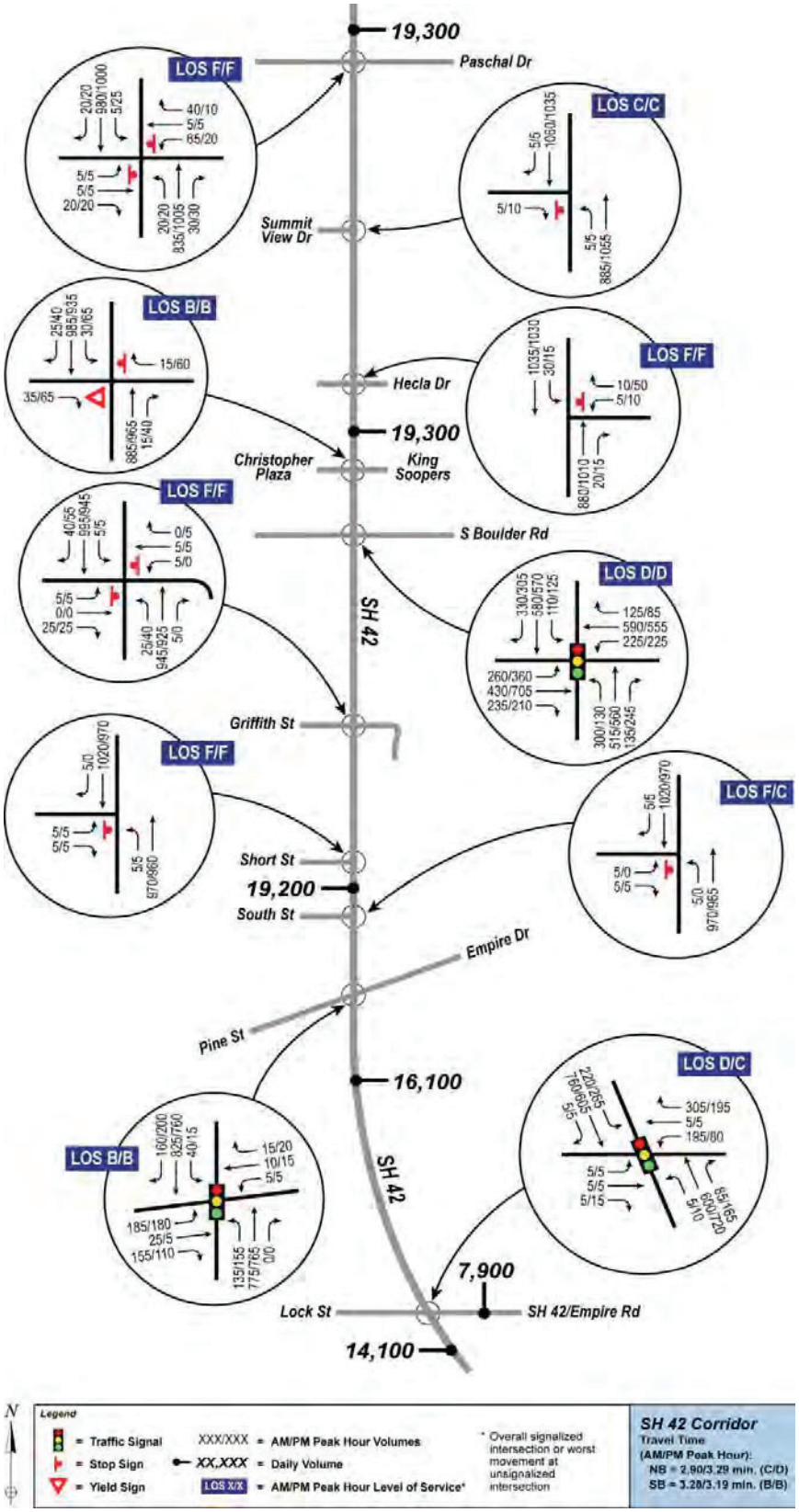
The SH 42 corridor from Lock Street to Paschal Drive can generally be physically characterized by relatively flat terrain on a straight, north-south alignment. The highway is currently situated in higher-speed, automobile-oriented environment, with the majority of the corridor being agricultural, industrial, and suburban strip retail land uses. The roadway provides limited pedestrian and bicycle facilities. Based on the physical condition of the corridor, traffic operations, and desired land uses, there are three distinct sections of the highway: from Lock Street to Pine Street, Pine Street to South Boulder Road, and South Boulder Road to Paschal Drive. The posted speed limit along the corridor from Lock Street to Pine Street is 40 miles per hour (MPH), 45 MPH from Pine Street to South Boulder Road and 50 MPH from South Boulder Road to Paschal Drive.

From Lock Street to Pine Street, the highway is a two-lane, rural highway with agriculture land uses on the east side and residential land uses setback on the west side of the roadway. Pine Street is the primary gateway intersection accessing downtown Louisville to the west. Between Pine Street and South Boulder Road, the highway parallels the Miner's Field neighborhood, the Little Italy neighborhood, and pockets of light industrial uses on the west. Two key section of this portion of the corridor (between South and Griffith and between Harper and South Boulder Road) represent the core area of the City's revitalization district. The Harney-Lastoka Open Space and the Louisville Sports Complex are located on the eastside of the highway. South Boulder Road is a major east-west corridor in Boulder County and its intersection with SH 42 represents the highest traffic volumes in the corridor. Two through lanes with dual left turns and auxiliary right turn lanes in each direction, surrounded by suburban commercial developments. The highway tapers back to a two-lane, rural highway north of South Boulder Road to Paschal Drive. This northern section of the corridor is primarily surrounded by agricultural land that is developing as suburban neighborhoods.

Traffic Characteristics

During the morning peak period (8:00 a.m.), it takes the average northbound driver approximately 2 minutes and 54 seconds to travel SH 42 from Lock Street to Paschal Drive. Similarly, it takes the average southbound driver approximately 3 minutes and 17 seconds. During the evening peak period (5:00 p.m.), it takes the average northbound driver approximately 3 minutes and 17 seconds to travel the corridor. Similarly, it takes the average southbound driver approximately 3 minutes and 11 seconds to travel the same route. Existing traffic operations are shown in Figure 5.

Figure 5. Existing Traffic Operations

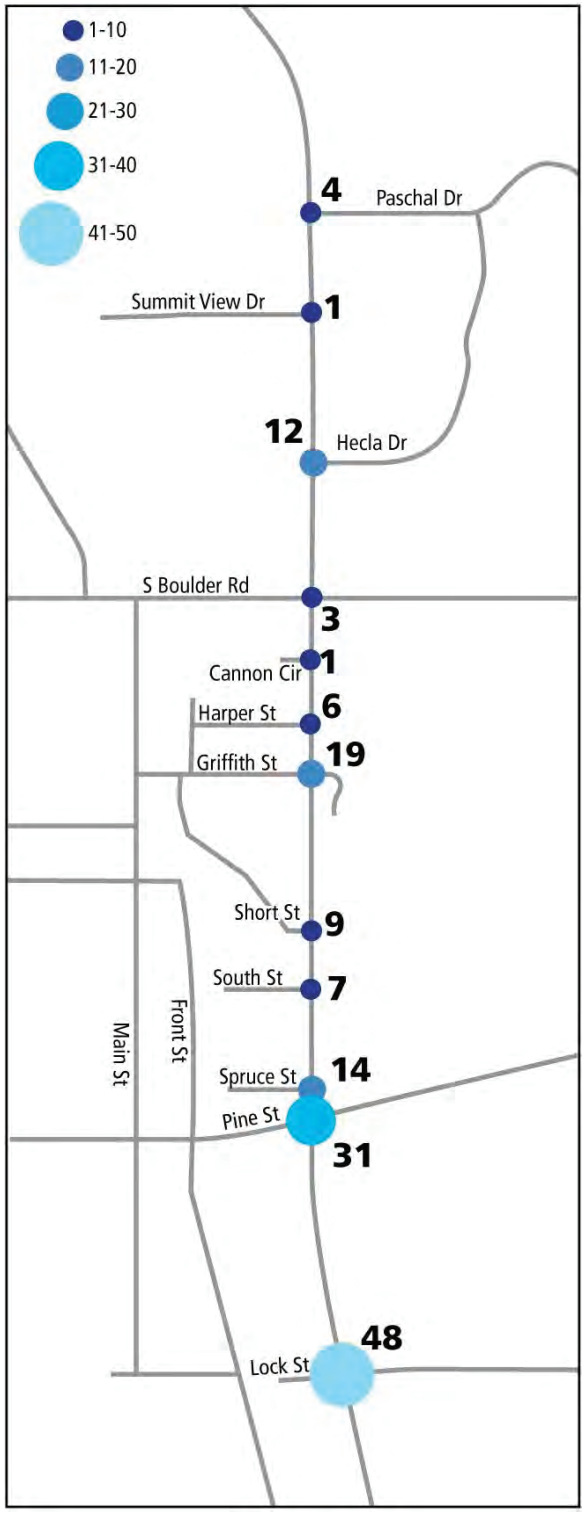


Accident History

The Louisville Police Department reported 155 accidents from January 2005 to August 2011 along the project corridor. The 155 accidents involved 331 automobiles, resulting in 62 injuries and 1 fatality. The fatality reported just north of Short Street occurred in 2011. A second fatality occurred near the intersection of Griffith since the completion of the analysis.

There are three intersections with high accident concentrations: Lock Street/Empire Road, Pine Street/Empire Drive, and Griffith Street. At Lock Street/Empire Road and Pine Street/Empire Drive, careless driving and failure to stop or yield account for more than 60 percent of the accidents (63 percent and 74 percent, respectively). Reported accidents by intersection are shown in Figure 6. For the complete Safety Assessment Report, see Appendix F.

Figure 6. Louisville Police Department Reported Accidents



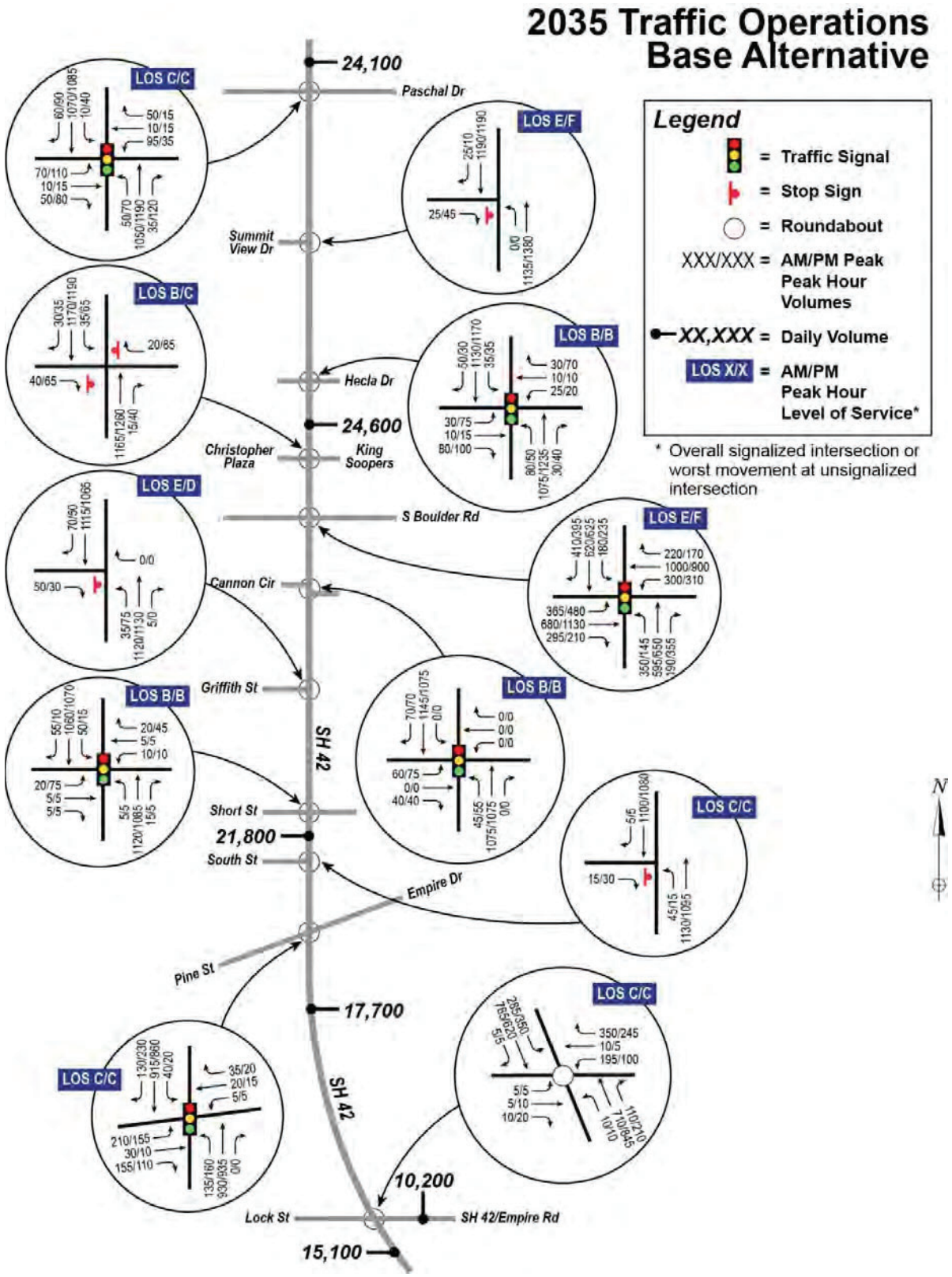
2035 Future No-Action Conditions

There are several changes that are assumed to be part of the No-Action conditions, including the following intersections:

- Paschal Drive – the intersection will be signalized as part of the Steel Ranch development in Louisville and the Indian Peaks development in Lafayette on the west side of the corridor.
- Hecla Drive – the intersection's signalization will occur as Boulder County develops the Alkonis Property on the west side of the intersection.
- Cannon Circle – a new full access signalized intersection will be installed with retail/commercial development on the west side of the intersection.
- Short Street – the intersection will be signalized as part of the redevelopment of the City's Revitalization District and the construction of the new trail connection between downtown (Downtown Gateway - BNSF underpass) and trails/parks facilities on the east side of SH 42. This signal will also serve the proposed Lafayette Soccer fields and eventual parking facilities for RTD's Northwest Rail station.

Under the No-Action 2035 conditions, the SH 42 corridor experiences operational issues with traffic building up along the highway during the peak hours, as shown in Figure 7. The South Boulder Road intersection is projected to operate at a level of service (LOS) F in the evening peak hour with 2- to 3-minute delays on the eastbound approach, the northbound through movement, and southbound left-turn movements.

Figure 7. 2035 No-Action Traffic Operations



At Griffith Street, the unsignalized, full-movement intersection would operate at LOS F during both peak periods with substantial delay for drivers turning attempting to enter SH 42 from Griffith. The Griffith intersection also presents increasing pedestrian crossing issues as residents continue to cross SH 42 at this unsignalized location to get to the open space and trails east of the roadway. The traffic signals at Short Street, Pine Street, and Lock Street would operate with acceptable overall LOS, but substantial northbound and southbound queues would build during the peak hours and impact upstream intersections.

Alternatives Evaluated

Alternatives were developed for the highway and for every intersection on SH 42 from Paschal Drive to Lock Street. Highway alternatives were developed that included three-lane with local street network enhancements option and a five-lane configuration. A three-lane with local network configuration is similar to existing highway conditions, with one through lane. Improvements would include a physical median and specific intersection improvements at Locke Street. Local network enhancement would create local access connections parallel to SH 42 between Pine Street and Paschal Drive. The five-lane configuration would add a through lane in both directions.

Five-Lane Alternative

The forecasted travel time to travel the highway between Paschal Drive and Lock Street was compared for three-lane and five-lane corridor alternatives that included the preferred configurations from the intersection alternatives evaluation. Travel time savings for the five-lane facility in the peak hours is estimated to be less than 1 minute faster than three-lane option. A complete comparison of 2035 travel times is illustrated in Table 3.

Table 3. 2035 Corridor Travel Times

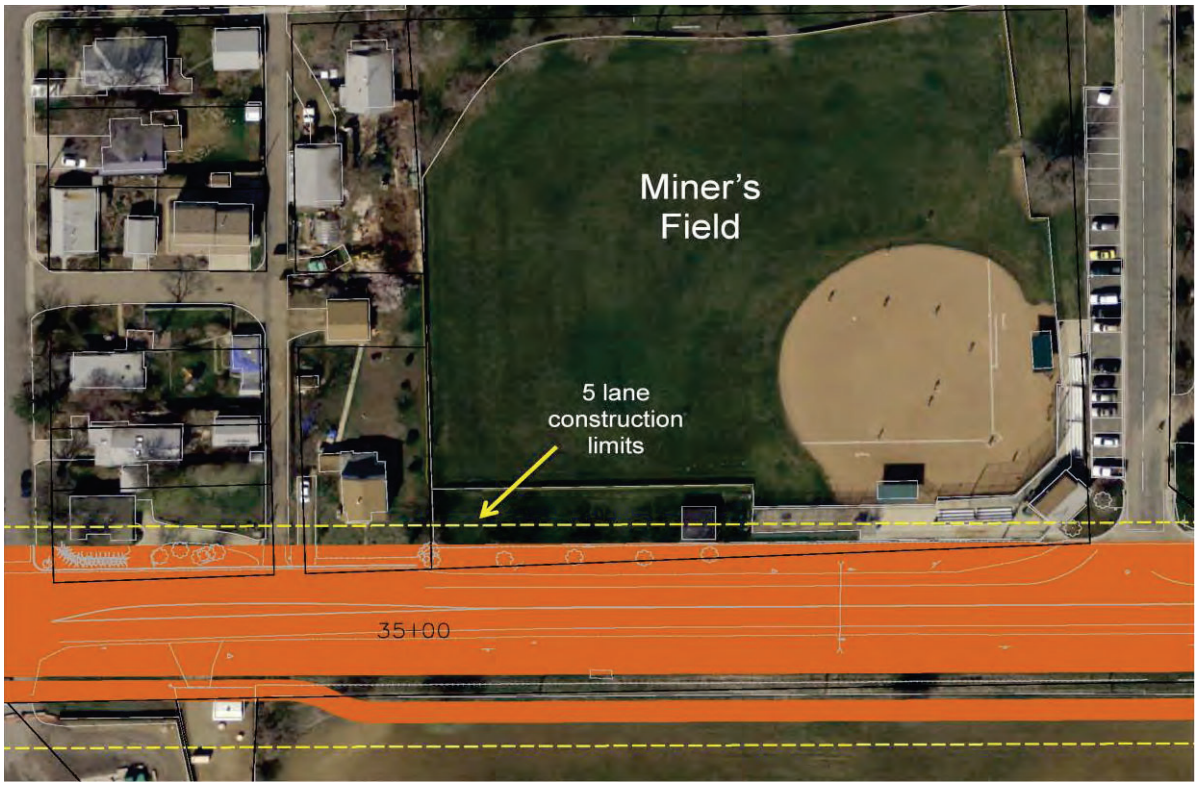
Scenario/Direction	Morning Peak (minutes)	Evening Peak (minutes)
2035 No-Action		
Northbound	4.84	6.01
Southbound	4.85	4.98
2035 Five-Lane		
Northbound	4.20	4.76
Southbound	4.02	3.97
2035 Three-Lane		
Northbound	4.44	5.65
Southbound	4.55	4.86

Expanding the corridor to five lanes would require the acquisition of private property and publically owned open space for right of way. Impacts would include required acquisition of historic properties such as Miner's Field and residential property in Little Italy and Miner's field.

Right-of-way requirements of the five-lane alternative along the impacts on historic and natural resources were deemed to be impractical given the limited travel time savings. As a result the five-lane alternative was eliminated from consideration. Traffic projections further suggest that one lane in each direction will be sufficient to carry the necessary traffic, as long as there are turn lanes and acceleration/deceleration

lanes at the major intersections. Multi-lane configurations of South Boulder Road and Lock Street will remain. Construction limit impacts for the five-lane alternative are illustrated on Figure 8.

Figure 8. Five-Lane Construction Limit Impacts



Intersection Alternatives

Context-sensitive alternatives were developed for each intersection along the corridor. Intersection alternatives evaluated intersections types such as:

- Right-in, right-out access
- Three-quarter access
- Full movement intersection
- Signalized intersection (with offset lefts)
- Two-lane roundabout
- Street closures with public amenities - ~~m~~ews"

The following section summarizes the three-lane alternative's individual intersection improvements and why the preferred alternative was selected based on the project's purpose and need statement and established project goals. The preferred alternative for the highway is a combination of the intersection modifications and access management strategies. Local street network improvements are critical to the ultimate success of the three-lane alternative. Local network enhancements will allow residents and employers in the corridor to access their homes and businesses without using SH42. These local network connections will extend the ultimate capacity of a three-lane SH42, preserving the small town character of Louisville. The ultimate configuration of the corridor and individual intersections is dependent on enhancement to the City's local street network. Recommended local network improvements are shown in

Figure 9 will enable CDOT and the City to manage access on SH42 and improve the roadways efficiency and safety. The plan outlines a staged implementation strategy to further manage access to the SH42 corridor as local network connections are improved.

Figure 9. Future Roadway Network

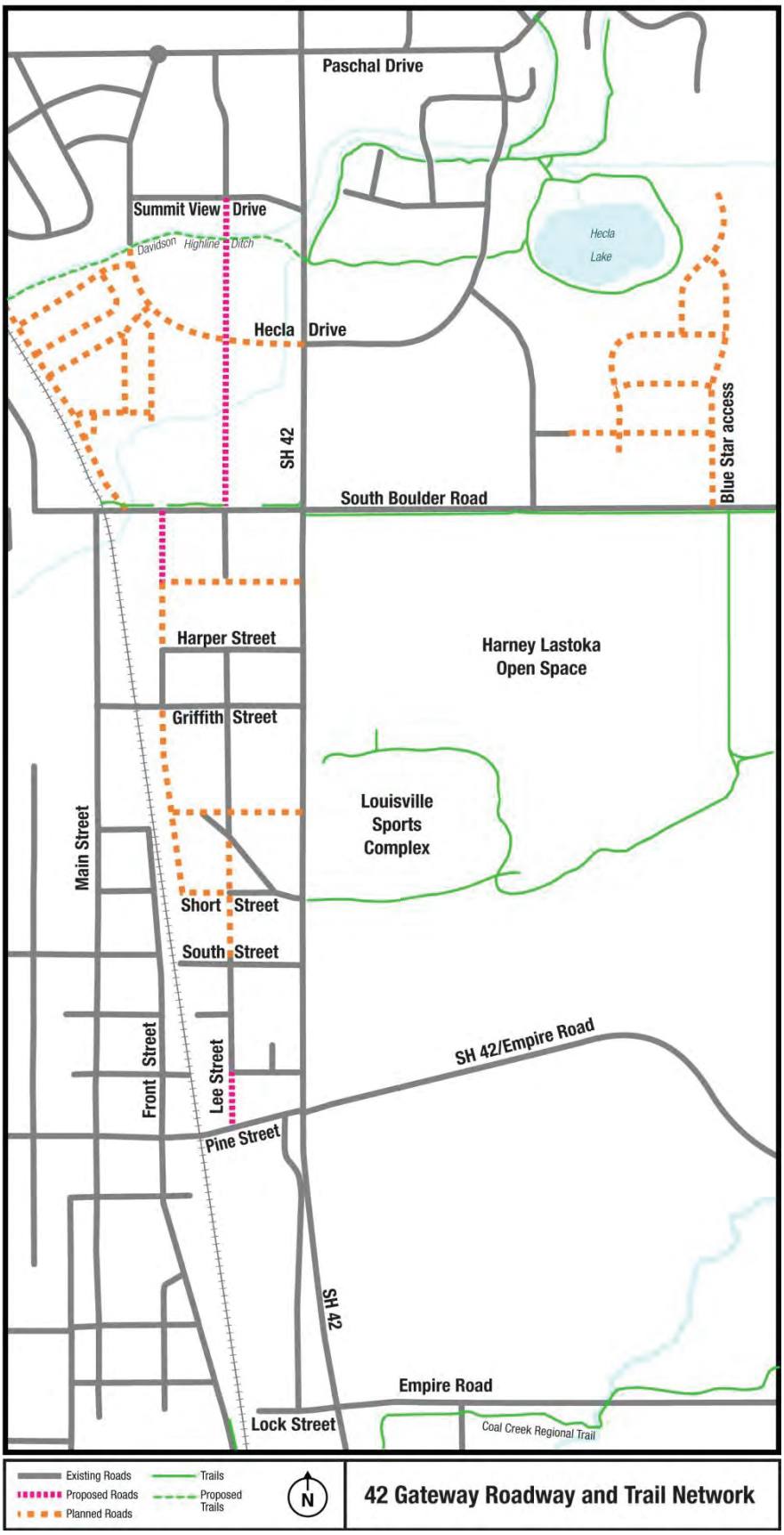


Table 4 summarizes the alternatives considered at individual intersections.

Table 4. Intersection Alternatives Considered

Intersection	Alternatives Considered
Paschal Drive	Signalized intersection with offset lefts 1-lane roundabout 2-lane roundabout
Summit View Drive	¾ access right in, right out access
Hecla Drive	Signalized intersection with offset lefts
Cannon Circle	¾ access Full-movement intersection
Harper Street	Right-in, right-out access
Griffith Street	¾ access Full-movement intersection
Caledonia Street	¾ access
Short Street	Signalized intersection with offset lefts
South Street	¾ access; Right-in, right-out access
Spruce Street	Closure with turnaround Closure with mews
Pine Street	Signalized intersection with offset lefts 2-lane roundabout
Lee Street Connection	Internal roadway network connection
Lock Street	2-lane roundabout

Paschal Drive

Pascal Drive is assumed to be signalized in the future as part of the Steel Ranch and Indian Peaks developments. Two alternatives considered included a signalized intersection with offset left turn lanes as well as a one and two-lane roundabout.

The future traffic volumes to/from the Steel Ranch development were taken from the development traffic impact study. The LOS for a signalized intersection is estimated to be LOS C in the 2035 in both the morning and evening peak hours. The LOS for a one-lane roundabout is estimated to be LOS F in the 2035 morning and evening peak hours with the northbound and southbound approaches experiencing delays of over 3 minutes. A two-lane roundabout alternative would operate at LOS B during the 2035 morning peak hour, but would also create issues with right-of-way impacts, as well as some real difficulties for pedestrian, bicycle facilities and transit service through the intersection. Based on the

alternatives analysis, the recommended alternative for Paschal Drive is the signalized intersection with offset left-turn lanes, as shown in Figure 10.

The signalized alternative will be designed for sidewalks, bike lanes, and transit stops, as needed. Offset left-turn lanes with a raised median separation will improve vehicle sight lines and provide a refuge for pedestrians crossing SH 42. Over-time, as local street network connections occur through the Street Ranch Development, the project team recommends minimizing the number of separate right-turn and acceleration lanes to facilitate multi-modal movements and improving by reducing the crossing distance, reducing turning traffic speeds, and allowing RTD bus stops to remain within the travel lane (making it easier for buses to move back into traffic after a stop).

An eastbound to southbound acceleration lane will be constructed with the Steel Ranch Development in the near-term. However, it is recommended this acceleration lane be removed as local street connections occur. CDOT requires completion of an updated traffic study that would include new traffic counts and the construction of a new parallel roadway to SH 42 between Paschal and South Boulder Road before the acceleration lane can be considered for removal.

Summit View Drive

The preferred road configuration between Paschal Drive and Summit View Drive is one lane in each direction. The addition a median, on-street bike lanes and a sidewalk on the west side are included as the preferred alternative. Right-in-and right-out access points shall be maintained between these intersections.

Alternatives considered for Summit View Drive intersection include a right-in/right-out and a ¾-movement intersection (accommodating a northbound left). The ¾-movement intersection would operate similar to the right-in/right-out configuration and is consistent with the configuration in the Steel Ranch development traffic impact study. A speed table, or raised crosswalk, will be added to the pedestrian crossing on the west side of SH 42, as seen in Figure 11. As local street network connections occur between Paschal Drive and South Boulder Road, it is recommended to further restrict access to Summit View Drive to a right-in-right-out configuration.

Hecla Drive

From Summit View Drive to Hecla Drive, the preferred near-term road configuration is one lane in each direction a continuous left-turn lane with bike lanes and a sidewalk on the west side of the roadway. In the long-term, as local street connections occur, it is recommended a raised median be introduced and private access points be limited to right-in-right-out configurations, as shown in Figure 11.

Half-way between Summit View Drive and Hecla Drive, a pedestrian and trail underpass will be constructed. This underpass will facilitate a trail crossing of SH42, connecting the Steel Ranch Community to the North End Neighborhood. Ultimately, this underpass will provide a City-wide connection linking the City of Lafayette and Wanaka Lake to Louisville's: Hecla Lake, north open space, Harper Lake, Davison Mesa, Boulder County's Marshall Mesa, and ultimately Eldorado Canyon State Park. Sidewalks are included on both sides of the road from Hecla Drive to the trail underpass, and only on the west side north of the trail underpass.

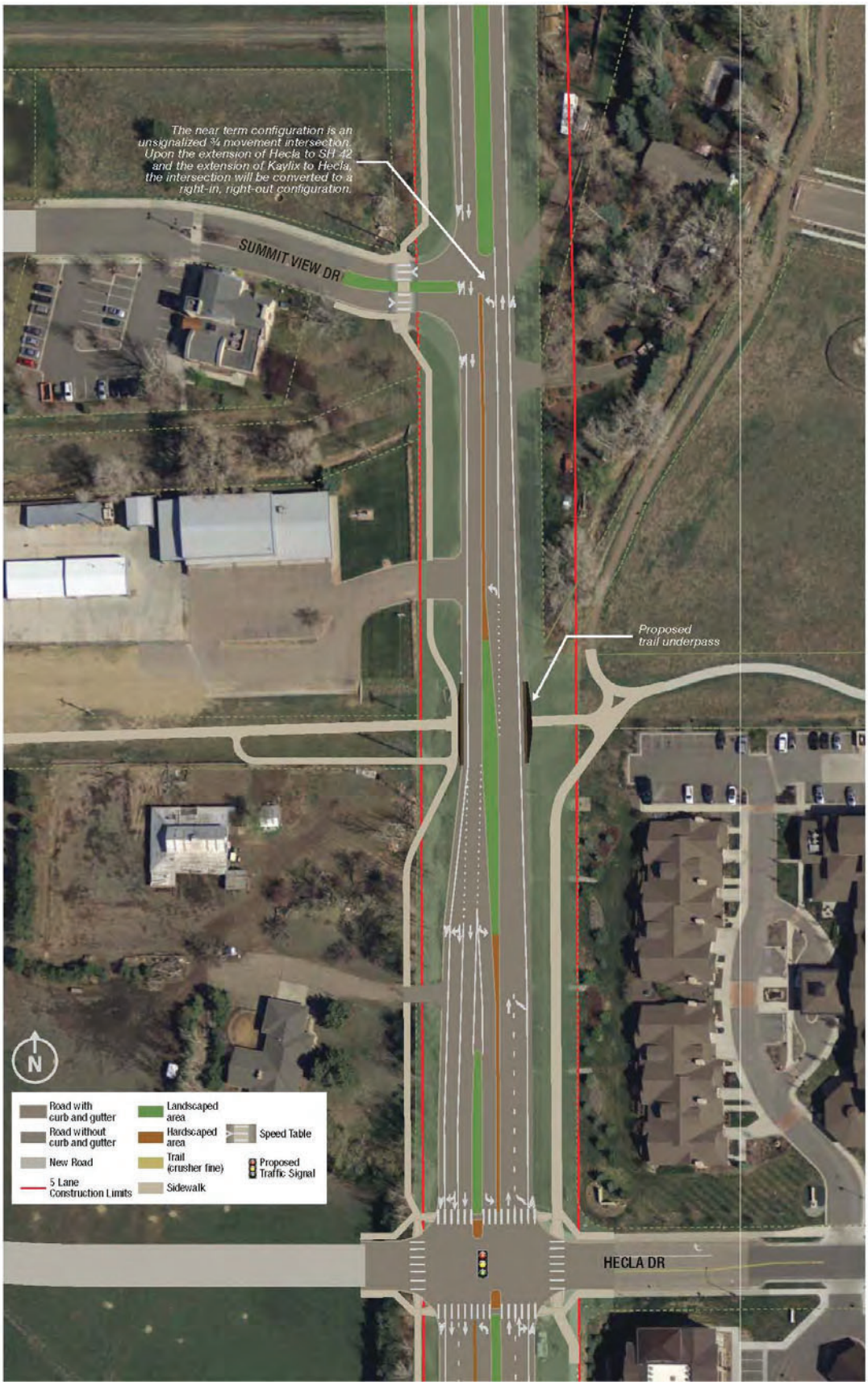
The recommended alternatives for Hecla Drive intersection includes a traffic signal with offset left-turn lanes and transit prioritization. The LOS for a signalized intersection is estimated to be LOS B in the 2035 morning and evening peak hours. A second southbound through lane is developed north of Hecla Drive that will operate as a shared through/right lane. These lanes connect to the southbound through lanes

that exist at South Boulder Road. Northbound SH 42 has two through lanes extending north of Hecla Drive where the outside through lane merges to one lane. The highway transitions into the current configuration between Hecla Drive to South Boulder Road, with slight modifications to the existing island median and the introduction of speed tables through the dedicated right turn lanes.

The intersection improvements will be designed for sidewalks, bike lanes, and transit stops, as needed. Offset left-turn lanes with a raised median separation will provide a refuge for pedestrians crossing the highway. Minimizing the number of separate right-turn and acceleration lanes will also facilitate multi-modal movements by reducing the crossing distance, slowing down turning traffic, and keeping bus stops within the travel lane.

Figure 10. Paschal Drive Preferred Alternative

Figure 11. Summit View Drive and Hecla Drive Preferred Alternative



South Boulder Road

No intersection alternatives were considered for South Boulder Road. The intersection is assumed to remain as it is today because intersection improvements and reconstruction took place in 2010. The LOS under the 2035 conditions is expected to be LOS E in the morning peak hour and LOS F in the evening peak hour. This section will include, transit signal prioritization, speed tables for the right-turn lanes, minor landscaping improvements and other transitional improvements, as shown in Figure 12. Access points are maintained. Between South Boulder Road and Cannon Circle the highway transitions from five-lanes to three-lanes.

Cannon Circle

A traffic signal is the recommended alternative at Cannon Circle as agreed upon with the development on the west side of the highway. The traffic signal will include offset, or skewed, east and west approaches to accommodate full access to the Harney Lastoka Open Space farmstead driveway. This skew is shown in Figure 13. The signal timing for this intersection will be split phased. The LOS for this intersection is estimated to be LOS B in the 2035 morning and evening peak hours.

Harper Street

From Canon Circle to Harper Street, the road will maintain one-lane in each direction, similar to existing conditions, with the addition of a raised median, bike lanes, a sidewalk on the west side. A recreational crusherfine trail will be provided the east side within the Harney-Lastoka Open Space.

The only alternative recommended for Harper Street is a right-in, right-out configuration. Harper Street should be modified to restrict access, only allowing right in and right out in the southbound direction to prevent any conflict with on-coming traffic. Access would not be provided to Harper Street in the northbound direction.

Griffith Street

The preferred configuration between Harper Street and Griffith Street is one-lane in each direction with a raised median, bike lanes and includes sidewalk on the west side and the recreational trail on the east side. There is a dedicated right-turn lane in the southbound direction, as shown in Figure 13. The driveways accessing the highway between Harper Street and Griffith Street are recommended to be eliminated with access provided from an improved alley at the back of the properties. CDOT will require that this be documented and an access modification to be submitted to make this a formal agreement. Under the preferred alternative, alley improvements will be provided by the City.

Alternatives considered for Griffith Street include an unsignalized, full-movement intersection as well as a ¾-movement intersection. The unsignalized, full-movement intersection at Griffith Street would operate at a LOS F for the 2035 morning and evening peaks with very high side street delay. The unsignalized ¾-movement intersection would operate at a LOS E during the 2035 morning peak hour and at LOS D during the 2035 evening peak hour. A raised median on the north leg of the intersection would provide a pedestrian refuge in the center of the highway to facilitate the desired pedestrian crossing at this location. The preferred alternative would be the unsignalized ¾-movement intersection that restricts access, only allowing access to the west in the southbound direction. Access to the east and west will be provided in the northbound direction. The introduction of the ¾ movement will occur concurrent with the construction of the City of Lafayette Soccer fields and internal street connections between Griffith and South Boulder Road.

Figure 12. South Boulder Road

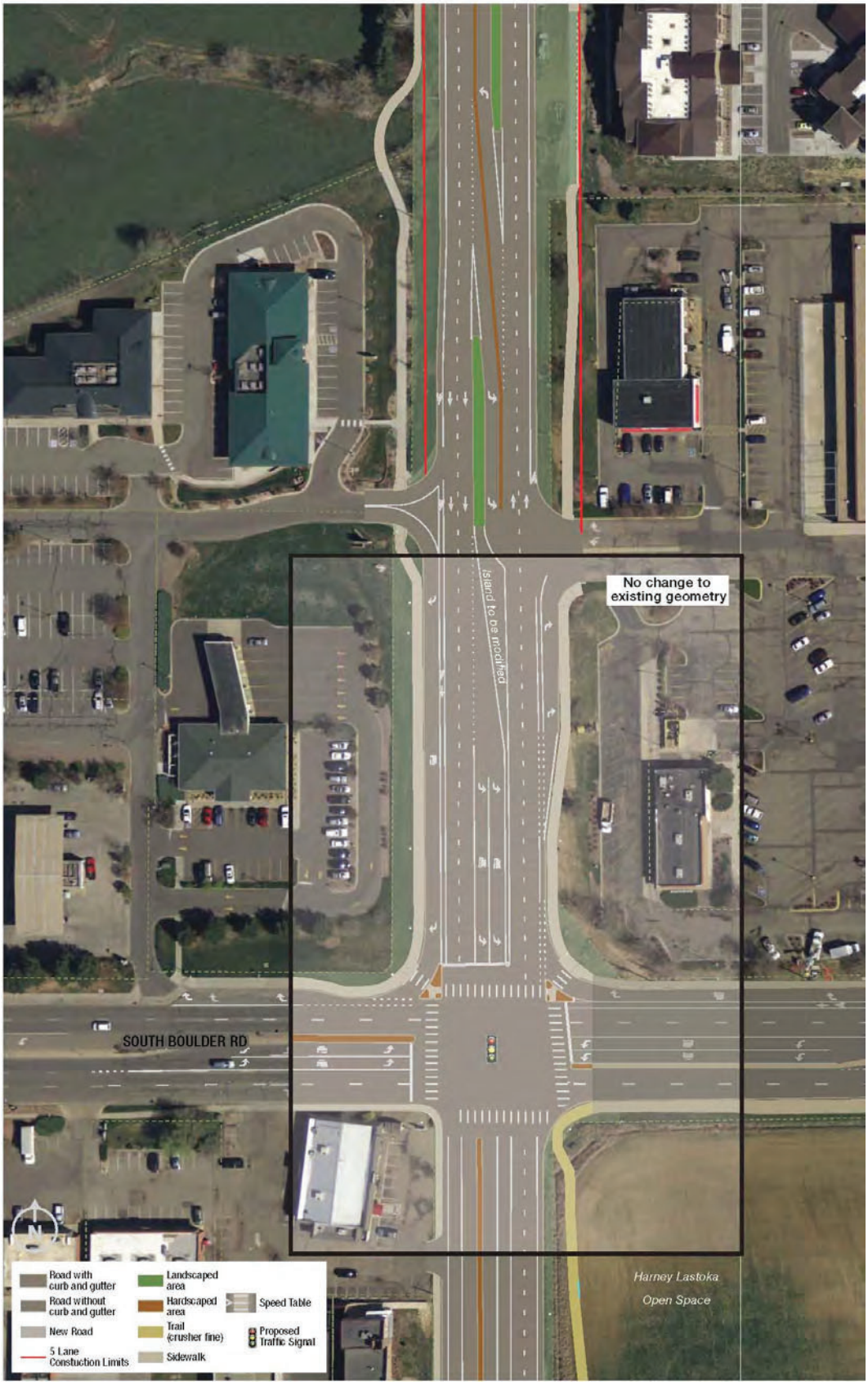
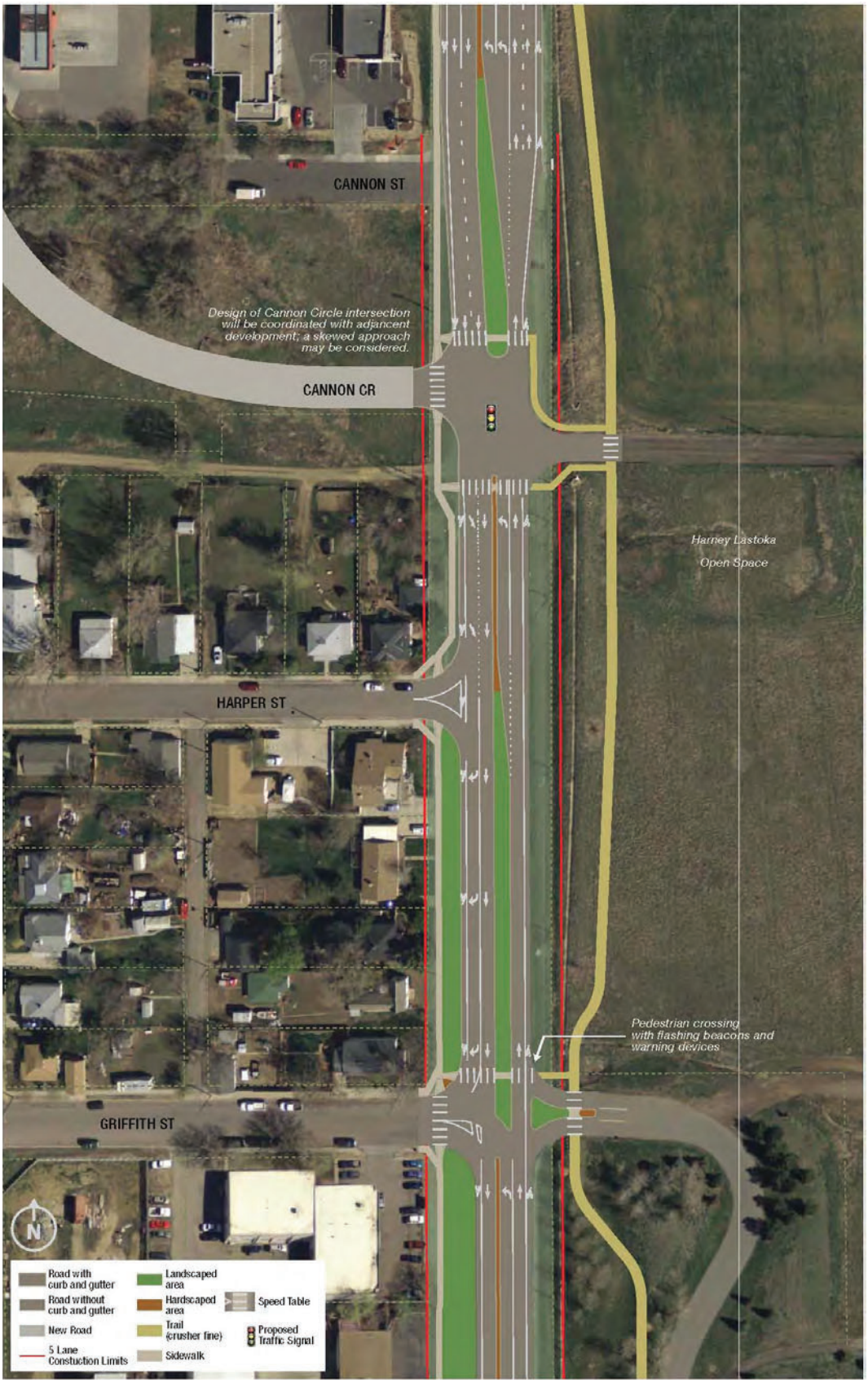


Figure 13. Cannon Circle, Harper Street and Griffith Street Preferred Alternative



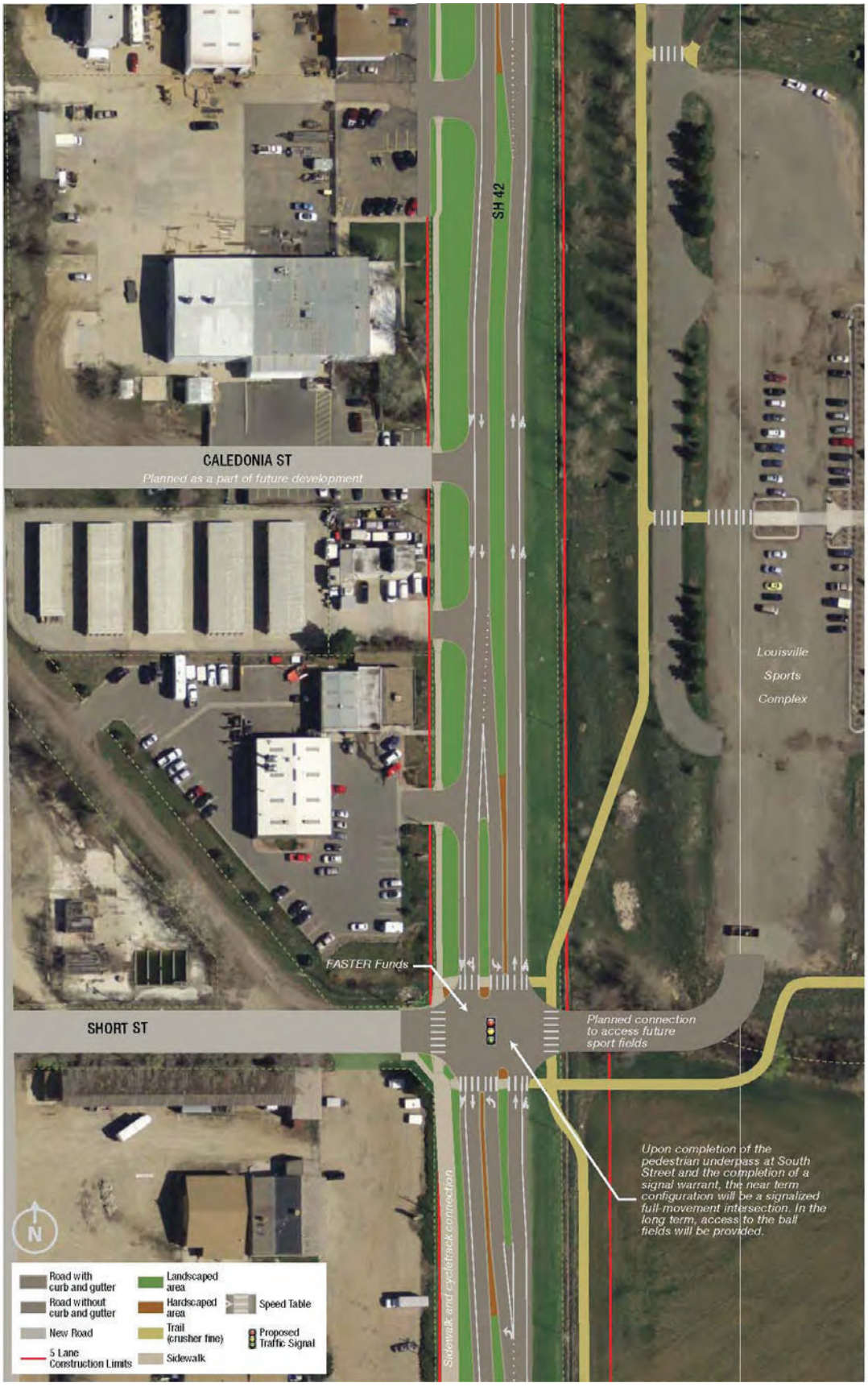
Caledonia Street and South Street

From Griffith Street to the proposed signalized intersection at South Street, the road will maintain one lane in each direction with a raised median, bike lanes and includes a sidewalk on the west side and the recreational trail on the east side. Full access points are maintained in the near term. However, as the Cannon Street connection between Griffith and Short Street occurs, the City recommends introducing the raised median and limiting business access to right-in- right-out configurations. The proposed Caledonia Street connection is a long-term expectation of private development. This street will only be developed with properties redevelopment. The final configuration is included as a part of the recommended alternative and will be included with restricted access to the highway as a right-in, right-out intersection, as shown in Figure 14.

Short Street is the anticipated location for access to the existing Louisville/Lafayette Sports Complex, Louisville Revitalization District, and the proposed Northwest Rail RTD station overflow parking area. A traffic signal is assumed at this location as agreed upon with the construction of the BNSF underpass that will facilitate the trail connection and redevelopment in addition to the development of the RTD station area for downtown Louisville. The Short Street intersection is shown in Figure 14. The LOS for a signalized intersection is estimated to be LOS B in the 2035 morning and evening peak hours. The signal provides added safety for pedestrian crossing of the highway.

The intersection improvements will be designed for sidewalks, bike lanes, and transit stops/and prioritization as needed. The offset left-turn lanes with a raised median separation will provide a refuge for pedestrians crossing SH 42. Minimizing the number of separate right-turn and acceleration lanes will also facilitate multi-modal movements by reducing the crossing distance, slowing down turning traffic, and keeping bus stops within the travel lane.

Figure 14. Caledonia Street and Short Street Preferred Alternative



South Street

From Short Street to South Street, the road is one lane in each direction with bike lanes and includes a sidewalk on the west side and a recreational trail on the east side.

The preferred alternative at South Street includes a ¾-movement intersection. The unsignalized ¾-movement intersection would operate at a LOS E during the 2035 morning peak hour and at LOS D during the 2035 evening peak hour. South Street would be modified to restrict access, not allowing access from the west to northbound highway. The planned downtown connection into Louisville is planned at South Street under the BNSF tracks as described later in this report.

Spruce Street

From South Street to Spruce Street, the road is one lane in each direction with a raised median, bike lane and includes a sidewalk on the west side and a trail on the east side. Access points are maintained. After the completion of the planned internal roadway network, Spruce Street will be closed to highway access, and a mews, or landscaped area, will be included along the closure/highway. The Spruce Street closure and mews is shown in Figure 15.

Two-local network connections are required in association with the closing of Spruce Street: 1) Extending Cannon Street between South Street and Short Street; and, 2) Extending Lee Street from Spruce to Pine Street. The Cannon extension is expected to occur with the redevelopment of the City's revitalization district. The Lee Street extension will require City initiative and shall only occur when redevelopment request along the north side of Pine Street occurs.

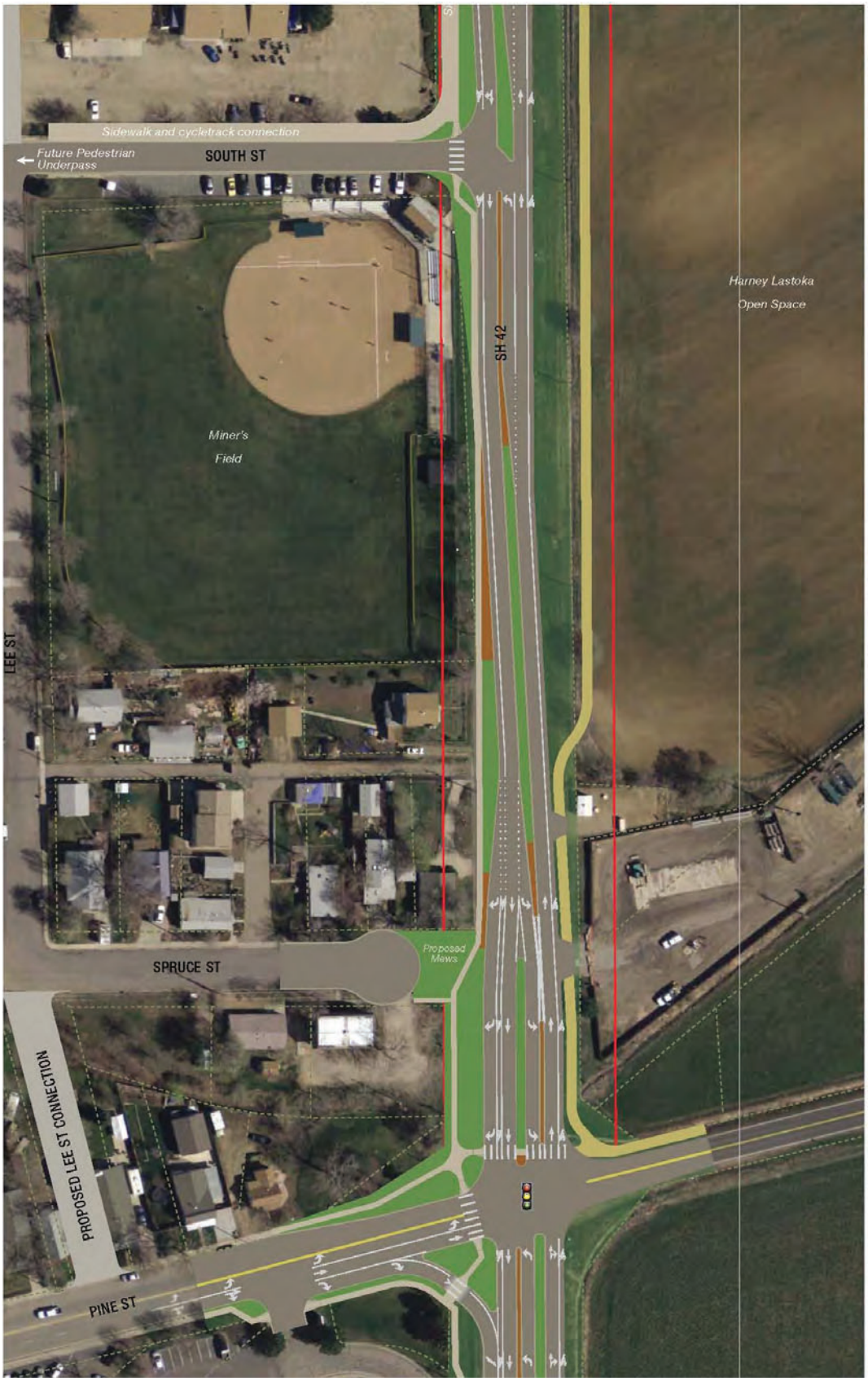
Pine Street

Just north of Spruce Street, the roadway section expands from one lane in each direction to include right- and left-turn lanes. Bike lanes are also included. A detached sidewalk is included on the west, and the recreational trail through the Harney Lastoka Open Space starts on the east side starting at Pine Street and extending to the north.

Alternatives considered for Pine Street included a signalized intersection and a roundabout. The LOS for a signalized intersection is estimated to be LOS C in the 2035 morning and evening peak hours. An eastbound free right-turn lane with a southbound acceleration lane facilitates traffic movement from downtown Louisville to southbound SH 42. The LOS for a two-lane roundabout is estimated to be LOS C in the 2035 morning and evening peak hours. The two-lane roundabout would create issues with where to add and drop the extra lanes, perceived difficulties for bike lane and transit stop locations, and property impacts surrounding the intersection. The recommended alternative is the traffic signal with offset left-turn lanes.

The signalized intersection will be designed for sidewalks, bike lanes, and transit stops/and prioritization as needed. The southbound right-turn lane and acceleration lane may be designed and operated as a bus queue jump lane when transit is introduced to the corridor. Offset left-turn lanes with a raised median separation will provide a refuge for pedestrians crossing the highway.

Figure 15. South Street, Spruce Street, and Pine Street Preferred Alternative



Lee Street Connection

A new connection is proposed to connect Lee Street to Pine Street. As discussed earlier, the ultimate preferred highway alternative is dependent on additional transportation facilities being built internally to the city street network. The Lee Street connection is a key connection needed to establish this internal network. The City will initiate this connection as the surrounding land redevelops. The Lee Street connection is shown in Figure 15.

Lock Street

From Pine Street to Lock Street, the road is one lane in each direction with a raised median and bike lanes. Sidewalks are not included in this section of the highway, as seen in Figure 16. Near Lock Street, the section expands to two lanes in the southbound direction in advance of the intersection, while in the northbound direction the two lanes from the intersection merge into one.

The two intersection types considered at this location include the existing traffic signal and a two-lane roundabout. The LOS for a signalized intersection is estimated to be LOS C in the 2035 morning peak hour and LOS D in the evening peak hour. The LOS for a two-lane roundabout is estimated to be LOS C during the 2035 morning and evening peak hours. The recommended alternative at Lock Street is the two-lane roundabout. The roundabout will realize the operational benefits, establish speed expectations and become the southern gateway into the city. Landscaping features, way finding, and other gateway elements will be incorporated into the design of the roundabout to create a distinct gateway.

Figure 16. Lock Street Preferred Alternative

Traffic Operational Analysis

The complete highway corridor alternative was established by combining the recommended intersection configurations at each location and in part, based on the operational analysis. The operations of the intersection alternatives are summarized in Table 5 and fully explained in Appendix H, Multimodal Transportation Assessment memo.

Table 5. Intersection Operations

Intersection/Alternative	2035 AM Peak Hour		2035 PM Peak Hour	
	LOS	Delay	LOS	Delay
Paschal Drive				
*Signalized with Offset Lefts	C	22.3	C	21.8
Roundabout (2 lanes)	B	13.4	C	20.2
Summit View Drive				
Unsignalized Right-in/Right-out	E	46.3	F	56.9
*Unsignalized ¾ Movement	E	49.2	F	58.7
Hecla Drive				
*Signalized with Offset Lefts	B	10.2	B	12.0
South Boulder Road				
*Signalized (existing configuration)	E	66.5	F	111.0
Cannon Circle				
*Signalized with Eastbound Leg	B	15.0	B	19.3
Griffith Street				
Unsignalized Full Movement	F	917.5	F	738.8
*Unsignalized ¾ Movement	E	39.3	D	27.9
Short Street				
*Signalized	B	10.5	B	13.3
South Street				
*Unsignalized ¾ Movement	C	23.3	C	23.5
Pine Street/Empire Drive				
*Signalized- Offset Lefts & Eastbound Free Right	C	28.8	C	22.5
Roundabout (2 lanes)	C	17.0	C	15.2
Lock Street/SH42 (Empire Road)				
Signalized	C	28.8	D	47.8
*Roundabout (2 lanes)	C	22.4	C	15.9

***Recommended alternative**

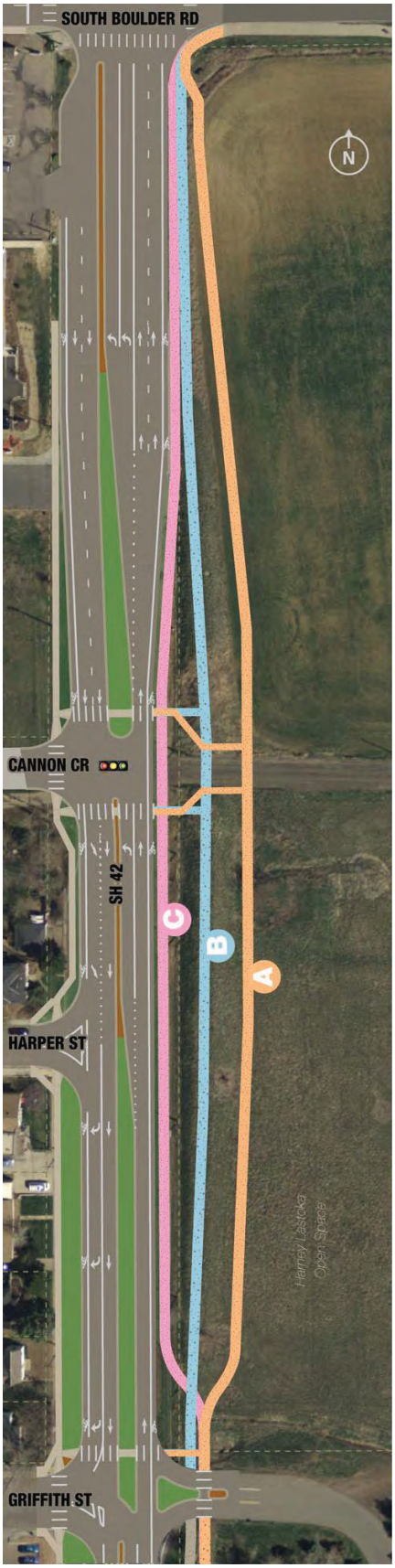
Trail Routes

One of the other major goals of the project is to provide improved trail connections throughout the corridor. The following alternatives were considered for a trail on the west side of the highway along the open space:

- **No-action.** The no-action alternative would not require any investment, but would not provide any additional connectivity for pedestrians and cyclists.
- **Trail adjacent to SH 42.** The trail would have minor impact to open space. Pedestrians and cyclists using the trail would be located immediately next to traffic. Option C in Figure 17 shows this alignment.
- **Trail atop the irrigation berm in the open space.** The pedestrians and cyclists would be moved away from the highway; however, there would be impacts to the open space and irrigation facilities. Option B in Figure 17 shows this option.
- **Trail adjacent to the east side of the berm.** This trail alternative would be located on the east side of the berm. This location would provide the best overall experience for trail users because it would provide the greatest buffer from the traffic, noise, and visual impacts of the highway. Option A in Figure 17 shows this alignment.

Extensive coordination has been conducted with Boulder County and the City of Lafayette on the potential trail alignment. The preferred alignment is to the east side of the berm, which has been agreed upon by owners, but will require an amendment to the open space master plan.

Figure 17. Trail Route Options



Costs and Roadway Implementation

The implementation of the Highway 42 Corridor improvements will require the cooperation of a number of vested partners. The nature of the recommended improvement will required a stage approach and will ultimately be timed with the private development community and their ultimate construction of the City's local street network improvements. It is currently anticipated this project will be implemented in two-phases: near term (0-5 years) and the long-term (5+ years).

City staff is currently pursuing the near-term initiatives as a single project in cooperation with Boulder County and the Colorado Department of Transportation. The following tables outline the recommended phasing and total costs of the project. The initial project assumes no local street network enhancements being implemented. Long-term improvements and further access controls and safety improvements for the corridor should occur with local street network enhancement provided by the private sector through the development review process.

Table 6. Implementation Table

IMROVEMENT	NEAR TERM (0-5 Years)		LONG TERM (5+ Years)		PARTNERS		
	Configuration	*Cost (in thousands)*	*Configuration*	*Cost (in thousands)*	*CDOT*	*Boulder County/ Lafayette*	*Private Land Owners*
Paschal Drive Intersection	*Signalized, full movement*	*$425*	*Complete*	*$0*	***X***	***L***	
Paschal Drive to Summit View Drive Segment	Final configuration with southbound acceleration lane at Paschal Drive	$1,200	Removal of southbound acceleration lane at Paschal Drive when local street network connects from Paschal Drive to South Boulder Road	$50	**X**		**X**
Summit View Drive Intersection	*Unsignalized, 3/4 movement*	*$0*	*Unsignalized right-in, right-out upon extension of Hecla Drive to SH 42 and extension of Kaylix Avenue to Hecla Drive*	*$0*	***X***		***X***
Summit View Drive to Hecla Drive Segment	Final configuration without median	$1,750	Final configuration upon extension of Hecla Drive to SH 42 and extension of Kaylix Avenue to Hecla Drive	$200	**X**		**X**
Hecla Drive Intersection	*Unsignalized, full movement*	*$0*	*Signalized, full movement upon extension of Hecla Drive*	*$425*	***X***		***X***
Hecla Drive to South Boulder Road Segment	Final configuration	$1,400	Complete	$0	**X**		
South Boulder Road Intersection	*Current configuration with addition of raised crosswalks at free right turns*	*$50*	*Complete*	*$0*	***X***		
South Boulder Rodd to Cannon Circle Segment	Final configuration	$1,000	Complete	$0	**X**		**X**
Cannon Circle Intersection	*Unsignalized, full movement*	*$0*	*Signalized, full movement upon extension of Cannon Circle*	*$425*	***X***		***X***
Cannon Circle to Griffith Street Segment	Final configuration including a commitment from the City to plow the alley between Harper Street and Griffith Street as well as alley lighting improvements	$1,300	Complete		**X**		**X**
Griffith Street Intersection	*Unsignalized, full movement*	*$0*	*Unsignalized, 3/4 movement upon signalization of Short Street and Lafayette ball fields entrance completion*	*$100*	***X***	***L & BC***	
Griffith Street to Short Street Segment	Final configuration without median	$2,250	Final configuration upon extension of Cannon Street between Griffith Street and South Street	$200	**X**		**X**
Short Street Intersection	*Signalized, full movement upon completion of underpass of railroad tracks at South Street and a signal warrant*	*$425*	*Signalized, full movement with connection to ball fields*	*$100*	***X***	***L***	
Short Street to South Street Segment	Final configuration	$650	Complete	$0	**X**		

IMROVEMENT	NEAR TERM (0-5 Years)		LONG TERM (5+ Years)		PARTNERS		
	Configuration	***Cost (in thousands)***	***Configuration***	***Cost (in thousands)***	***CDOT***	***Boulder County/ Lafayette***	***Private Land Owners***
South Street Intersection	*Unsignalized, full movement*	*$0*	*Unsignalized, 3/4 movement when Cannon Street extends to South Street*	*$0*	***X***		***X***
South Street to Pine Street Segment	Final configuration	$2,600	Complete	$0	**X**		
Pine Street Intersection	*Signalized, full movement*	*$425*	*Complete*	*$0*	***X***		
Pine Street to Lock Street Segment	Final configuration	$1,000	Complete	$0	**X**		
Lock Street Intersection	*Roundabout*	*$3,000*	*Complete*	*$0*	***X***		

Local Network Connections (costs to be determined)

- Kaylix Avenue through Davidson Highline
- Kaylix Avenue cross access easement through Christopher Plaza
- Lee Avenue extension

Trail Connections

Trail Connections	Cost
Underpass at Summit View Drive	Incorporated into Summit View Drive to Hecla Road Segment
Harney Lastoka, soft surface open space trail	Incorporated in all roadway segments from South Boulder Road to Pine Street
Soccer field trail extension to Coal Creek Trail	Incorporated into Griffith Street to Short Street Segment

Transit

A transit route alignment along SH 42 was considered as a part of this project. Population and employment densities along the potential route are anticipated to more than double from 2010 to 2035, which is an indication that the routes may provide needed transit service in the future. Furthermore, RTD's north-south transit coverage in the Northwest corridor between McCaslin Boulevard and US287 in Lafayette is insufficient.

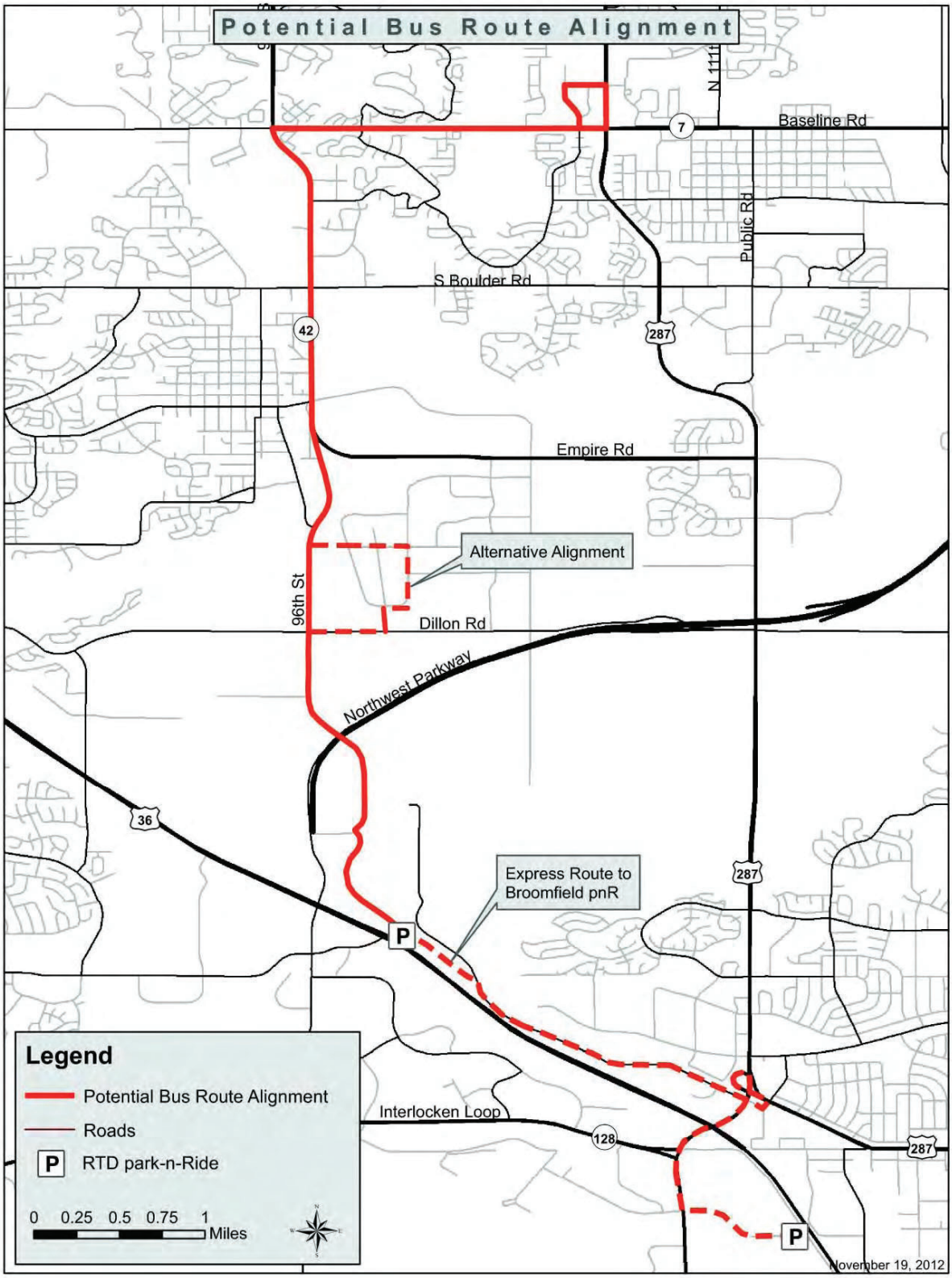
Route comparison and ridership analysis for a potential enhanced local transit route along SH42 connecting Erie, Louisville, and Lafayette with park-n-Rides (PnR) along US 36 was conducted for Boulder County in 2007. Two route alignments were under consideration, including one route concept advanced by RTD service planners. The first option, recommended by Boulder County and known as the 96L Option, was to create a new route with an alignment extending from the Erie Community Center to the East Flatiron Circle PnR. The second option, developed by RTD, included the modification/extension of existing routes (Route 76 and the JUMP) rather than the creation of a new route.

The analysis of these two route options showed the RTD Option resulting in a greater increase in boardings and linked transit trips than the 96L Option. The 96L Option, however, would provide greater access to many residential areas of Louisville. Both options were anticipated to carry comparable costs. In 2008, a new bus route, the Lynx, began operating between downtown Louisville and the US 36 corridor. Additionally, the existing JUMP route was extended to the town of Erie. In 2010, the Lynx service was discontinued as part of RTD's May 2010 service changes.

The route alignment considered for this project is similar to the 96L alignment considered in 2007, but does not travel west of SH 42 into Louisville or extend north to Erie, as seen in Figure 18. For this analysis, it was assumed the route would begin in the Wal-Mart parking lot northwest of the US 287/SH 7 intersection. The ~~b~~base alignment" route would follow Baseline Road, SH 42, and 96th Street before stopping at the US 36/E Flatiron Circle PnR. From there, the route would extend as non-stop express service to the US 36/Broomfield PnR adjacent to the Firstbank Event Center. In addition, an alternative route alignment was considered with stops at the future Colorado Technological Center (CTC) east of 96th Street and north of Dillon Road. A future variant would be considered as the 400 acre Phillip 66 property develops.

Providing transit service along the corridor is a mix of meeting the needs of the surrounding communities while offering the highest potential for ridership in a cost-effective manner. Local mobility needs, gaps in the current transit system, future land use plans, potential ridership estimates, and cost effectiveness should all factor into the final route determination. For a full summary of socioeconomic data and potential ridership, see Appendix I.

Figure 18. Potential Bus Routes



Redevelopment Area and "Gateway" Underpass

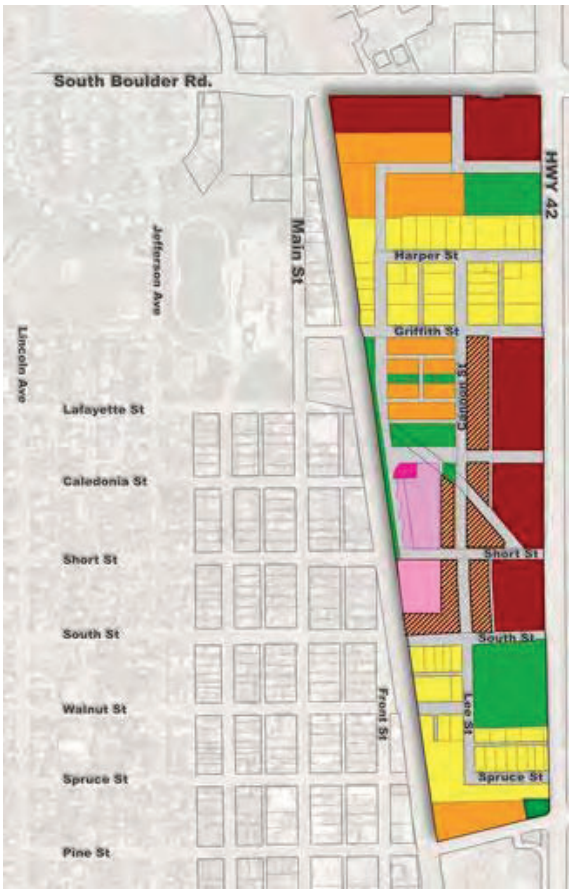
The proposed pedestrian "Gateway" underpass of the BNSF Railway line is located adjacent to the intersection of South Street and Front Street in Downtown Louisville. The underpass must meet BNSF, American Railway Engineering and Maintenance Association, and Louisville structural design criteria, which limits the design of the structure and basic geometric framework. Work was completed to determine the structure type and horizontal/vertical clearance.

Proposed underpass location, looking east from South Street.

Redevelopment Area

The mixed-use redevelopment area (MURD) is a key component of this project. The redevelopment area is the land surrounded by South Boulder Road, SH 42, Pine Street, and the BNSF railroad, as shown in Figure 19. This area was recently rezoned from industrial to a combination of mixed-use residential and commercial specifically to enable redevelopment. The current level of building intensity is significantly lower than that envisioned in the City's Master Plan. The mixed-use residential and commercial areas have potential to provide approximately 750,000 square feet of additional development.

Figure 19. Land Use Plan



The character of both the former industrial areas and existing commercial are envisioned to change significantly over time. Industrial is no longer permitted anywhere in the Mixed-use Redevelopment Area. Secondly, the new CC and MU-R districts will increase the mixing of uses in a pedestrian, or urban character. The end result is a gradual transition of the redevelopment area from a highway-oriented, light-industrial, pedestrian un-friendly area to a more intensely developed mix of commercial and residential uses (more ~~"m~~main street"-like), that is pedestrian-friendly, and functions very much as a walk-able extension of the downtown.

Design constraints

To meet the goals established for the downtown connection, the project team determined that the structure should be wide and inviting for pedestrians and cyclists. Figure 20 shows the conceptual underpass entrance looking east from South Street. To be successful, it is vital that development adjacent to the underpass create a continuous, pleasant experience to draw users back and forth from downtown and the redevelopment area.

Figure 20. Underpass Entrance, Looking East

Two structure types were originally evaluated by the project team: steel through plate girder and precast concrete double cell box beams. These structure types were used because they are regularly used for railroad structures, provided minimal structure depths, and are cost effective. A precast concrete box culvert was considered but was eliminated due to limited maximum width available, the time to construct a box this size required a shoo-fly, and it was less aesthetically pleasing than other options. A bridge using railroad standard structure spans and types therefore was selected.

The structure depth was an important consideration in the development of the underpass alternatives. It is desirable for the structure opening to be viewed from street level making it more inviting for users. On the downtown side (west side) there is approximately 4 feet 5 inches between the existing ground and top of rail requiring excavation to complete the underpass. The rail elevation cannot be raised at this location. Originally, the design proposed a 10 feet vertical clearance; however, an underpass height of 9 feet was selected to reduce the excavation and the combination of stairs, ramps, and cycle track that will connect pedestrians and cyclists from the underpass to Front Street.

The concept submittal was made to the BNSF Railway in summer 2012. After review of the conceptual plan, elevation and typical section for the underpass, BNSF Railway recommended using steel rolled beams with steel pan ballast deck. Given the City's desire for a 32-foot clear span, the BNSF Railway provided a similar example structure design for this span type that provided the same structure depth as the through plate girder. BNSF Railway strongly prefers the rolled beam structure based on maintenance and potential impacts to train operations.

An existing fiber optic line is located inside BNSF right of way on the east side of the existing tracks. The fiber optic line is ~~L~~onghaul Fiber" that is part of an intercity program that is connected nationally. It has 12 ducts cased in a 10-inch diameter high-density polyethylene pipe. Two potholes were conducted locating the line at 52 inches and 62 inches below existing ground. The proposed underpass excavation requires that the line be relocated.

The lowering of Front Street was evaluated to reduce the vertical elevation between the underpass and street level while improving the line of sight. Utilities within the intersection include storm, water, gas, and electric. It was decided to lower the grade to the extent practical while minimizing impacts to utilities and avoid street reconstruction outside of the intersection area.

One consideration was maintaining sufficient width on Front Street to allow two-way operations. This affects the width available between the end of the underpass structure and the ramps/stair structures. The end of the underpass structure shall be placed a minimum of 25 feet from the centerline of existing track.

Other Considerations

Coordination with the BNSF Railway was completed through direct communications, site review, and a 30 percent submittal. The 30 percent submittal is attached in Appendix J. The following are major agreements reached:

- BNSF Railway will construct the proposed bridge foundation and superstructure. The work will be completed while maintaining active railroad traffic eliminating the need for a shoo-fly. The City will pay BNSF for this work.
- The initial construction will involve the abutments for the existing track and a future track on the east side. The bridge for the existing track will be constructed initially with the future bridge to be place when needed. RTD asked that the design for the second bridge be approved by BNSF Railway as part of the initial work.
- The City will install fence along the right of way.
- Use tight mesh 10-foot tall fencing on each side of the structure in place of a canopy structure.
- After BNSF constructs the abutments and bridge, the City will excavate below and construct wall facings, connections, and other associated work.

The BNSF Railway will still install their required walkway structure on the west side of the structure and then the approved tight mesh 10-foot tall fencing to each side of the structure. They also advise that the City can attach some BNSF Railway approved artwork, so long as it does not interfere with train operations and the City maintains the artwork and possibly the fencing per the standard BNSF Construction & Maintenance Agreement. This will include railroad flagging if maintenance is needed because the maintenance would be within the 25-foot standard clearance zone. BNSF Railway is willing to forgo the pedestrian canopy on each side of the bridge structure if the fencing meets their criteria.

BNSF Railway is agreeable to these conditions and the City has agreed to fence the right of way to the public crossings on each end of the proposed Louisville Gateway Structure, which will direct pedestrians to the pedestrian underpass. They also cited the City's willingness to install the double structure width bridge abutment for a future second structure during the initial bridge construction.

The 42 Gateway: SWOT Summary

Introduction

Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis is a workshop tool commonly used to identify factors that are supportive or unfavorable to achieving a specific objective. The process is being utilized by the 42 Gateway project participating agencies to: (1) define parameters for problem-solving strategies that fit within an organization's concerns and (2) identify areas of convergent and divergent opinions between the participating agencies. The SWOT process used for the project engages each participating agency, including the City of Louisville (City), Louisville Revitalization Commission (LRC), Boulder County, City of Lafayette, local property owners, Colorado Department of Transportation (CDOT), and the Regional Transportation District (RTD). Individual interviews will be conducted with the Burlington Northern Santa Fe Railroad (BNSF) and the results of this interview will be incorporated into the summary as well.

Attendees of the participating agency SWOT workshops are identified in Table 1. Results from the individual SWOT workshops synthesized in this summary were documented and compared to find convergent and divergent themes and ideas. Commonalities found between the participating agencies can then be used as a springboard for defining the project's purpose and need, building project goals and objectives, and guide the 42 Gateway project in a direction that is mutually agreeable, and built on consensus. The divergent viewpoints documented during the SWOT analysis will be utilized in alternatives evaluation planning study to help establish constraints, evaluation criteria, and screening criteria.

SWOT Process

The SWOT process is straightforward and lends itself to short in-person workshops. Workshop participants are asked to identify strengths, weaknesses, opportunities, and threats as defined in Table 2. Factors surrounding the achievement of the objective statement are discussed, and placed into one of the four SWOT categories based on if they are external or internal (internal meaning within an agency's control and external being outside an agency's control) factors and whether or not the factors are positive or negative towards achieving the specified objective.

Table 1
Workshop Attendees

LRC	City of Louisville	Boulder County	City of Lafayette	Property Owners	CDOT	RTD
• Sam Light, Louisville City Attorney • Malcolm Fleming, Louisville City Manager • Bob Muckle, Louisville Mayor • Carlos Hernandez, LRC • Gavin McMillan, Planning Department • Rob Lathrop, LRC • Bonnie Star, Economic Development Director • Heather Balser, Deputy City Manager • Karl Becker, LRC • Troy Russ, Planning Director • Bob Tofte, LRC • Michael Menaker, LRC • Susan Loo, Council Member • Rick Brew, Delo, LLC • Chris Pritchard, LRC • Carrie Wallis, Atkins • Kelly Leadbetter, Atkins • Chase Mullen, Winston Associates • Jeff Winston, Winston Associates	• Malcolm Fleming, Louisville City Manager • Sean McCartney, Planning • Joe Stevens, Parks and Recreation • David Thompson, Public Works • Gavin McMillan, Planning • Troy Russ, Planning • Heather Balser, Deputy City Manager • Carrie Wallis, Atkins • Kelly Leadbetter, Atkins • Chase Mullen, Winston Associates • Jeff Winston, Winston Associates	• Julie McKay, Boulder County Transportation Planning Manager • George Gerstle, Boulder County Transportation Director • Justin Atherton-Wood, Boulder County Parks and Open Space Resource Planner • Rich Koopmann, Boulder County Parks and Open Space Resource Planning Manager • Carrie Wallis, Atkins • Kelly Leadbetter, Atkins • Chase Mullen, Winston Associates	• Karen Westover, Planning Manager • Peter Johnson, City Engineer • Carrie Wallis, Atkins • Kelly Leadbetter, Atkins • Chase Mullen, Winston Associates	• Liz Law-Evans, Boom LLC • Rob Lathrop, RCL Land Co. • Mike Kranzdorf, 1130 and1140 Pine Street • Wade Arnold, Coal Creek Station • David Waldner, Delo LLC • Rick Brew, Delo LLC • Justin McClure, Delo LLC • Gavin McMillan, Planning Department • Carrie Wallis, Atkins • Kelly Leadbetter, Atkins • Chase Mullen, Winston Associates	• Dan Marcucci, CDOT • Keith Sheaffer, CDOT • Karen Schneiders, CDOT • Myron Hora, CDOT • Carrie Wallis, Atkins • Kelly Leadbetter, Atkins • Chase Mullen, Winston Associates • Jeff Winston, Winston Associates	• Bill Sirois, RTD • Patrick McLaughlin, RTD • Carrie Wallis, Atkins • Kelly Leadbetter, Atkins • Chase Mullen, Winston Associates

Table 2
Strengths, Weaknesses, Opportunities, and Threats

	Positive	Negative
Internal	Strengths Factors and views held by the organization that *further* or support the project	Weaknesses Factors and views held by the organization that could *hinder* the project
External	Opportunities Factors outside of the organization's control that *further* the project	Threats Factors outside of the organization's control that *hinder* the project

SWOT Findings

This summary document synthesizes the combined result of the City of Louisville, LRC, Boulder County, City of Lafayette, local property owners, and CDOT SWOT workshop meetings. Topic categories were used to group similar themes and ideas shared by the different stakeholder groups to illustrate convergent and divergent opinions among the agencies. The topic categories used in this summary are bulleted below. Agency specific opinions that fall within these categories are documented in Appendix A.

- 42 as a gateway
- Speed and safety
- Stoplights
- Roundabouts
- Mobility
- Accessibility and connectivity
- Street edge safety
- Sidewalks and pedestrian access
- Underpasses
- Trail connections
- Transit
- Cycling
- Physical constraints and right-of-way
- Open space
- Parking
- Commercial development, economics, and land use
- Economics
- Funding
- Public opinion
- Process
- Commercial development
- Drainage and utilities
- Environmental

Based on the topics discussed within each category, major findings are determined. Major findings are observed opinion, whether convergent and divergent, that result. Major findings are only reported when there are comparable agency statements. For example, if all three agencies discuss parking, it is likely that convergent and diverged opinions can be observed and reported; however, if only one agency discusses parking, no agency comparisons can be made and no major finding can be reported.

Major findings are only intended to be statements identifying convergent and divergent opinions and the degree to which agencies agree or disagree. Major findings do not establish baseline

conditions, project vision, mission, goals, or objectives. However, the findings in this summary report may assist in the development of project vision, mission, goals, and objectives by focusing language on areas of agreement, and allowing for flexibility in areas of disagreement. Generally, major findings show that there is common appreciation for issues facing the project area, for the project process and for the perspectives held by other agencies.

42 as a gateway

Agencies agree that this project is an opportunity to create an aesthetically pleasing, livable place that enhances regional access. However, the City of Lafayette raised the concern that a change to Highway 42 could impact other facilities, and this needs to be accounted for.

Speed and safety

There is general recognition that creating a safe corridor, specifically as it relates to speed and crossing Highway 42, needs to be a project priority. The City of Louisville, Boulder County and the property owners agree that this project is an opportunity to slow the traffic on Highway 42. The LRC supports this idea and further sees it as a way to attract people to downtown Louisville.

Stoplights

Stoplights were a minor SWOT discussion among agencies. Agencies recognize, however, that the future traffic volumes could warrant additional stoplights, either at Paschal Drive or Cannon Circle.

Roundabouts

CDOT and the property owners expressed an interest in exploring alternative intersection designs, specifically roundabouts. Boulder County and the City of Lafayette expressed concerns regarding operations and the needed ROW.

Mobility

The City of Louisville and Boulder County agree that there are alternative ways to measure mobility that do not include capacity based models, or level-of-service approaches, and using alternative measures is desirable. The City of Lafayette expressed concerns on decreasing regional mobility.

Accessibility and connectivity

All agencies agree that this project presents an opportunity to enhance accessibility, specifically by connecting downtown Louisville to the Harney-Lastoka open space.

Street edge safety

The LRC and property owners agree that creating a pedestrian and cycling friendly environment along the corridor is an opportunity within this project. There is, however, concern about the differing elevations and proximity of drainage swales.

Sidewalks and pedestrian access

The majority of agencies agree that as development and transit use increases, safe pedestrian access needs to be provided in the study area, as it is currently not provided. The City of Louisville and the property owners pointed out two weaknesses: first, many properties have differing elevations and the lack of crossings north of South Boulder Road.

Underpasses

Underpass discussion focused on two areas within the study area: the railroad underpass and the potential of an underpass under Highway 42. The City of Louisville, the City of Lafayette and the property owners all agree that infrastructure and underpass placement needs to be addressed. The property owners further stated that an underpass is a key catalyst to development in the project area.

Trail connections

Trail connections, and increased regional trail access, was a topic of discussion in all of the SWOT workshops. The opportunity to integrate a trail and safe trail crossings within the project area is a desire.

Transit

The general consensus is that the uncertainty with FasTracks poses a threat to the project process. In that, agencies were open to the idea to move forward with a phased approach that accounts for the eventual transit station in Louisville.

Cycling

The cycling conversation was closely related to trail connections. The City of Louisville pointed out that there are two types of cyclists that this project should accommodate, recreation and experienced cyclists.

Physical constraints and right-of-way

Agencies recognize that the corridor is constrained by right-of-way and established land uses, specifically the open space to the east and historic Miner's field to the west.

Open space

Agencies recognize that the Harney-Lastoka open space is valuable to the project. The LRC, Boulder County and the City of Lafayette specific mention the project's ability to enhance access to the recreational facilities contained within the open space. Boulder County, however, raised some concern about monitoring the additional passive and active recreation areas.

Parking

Parking was a minor SWOT workshop discussion. CDOT and Boulder County did, however, raise two separate concerns. CDOT hesitates to consider on-street parking, as it would impact operations and delay. Boulder County, focusing on the parking lots within the open space, expressed concern that a change to the open space parking lot could impact the current management plan.

Commercial development, economics, and land use

The majority of agencies agree that this project is an opportunity to increase economic vitality and visible in Louisville. The general consensus is that this project can serve as a catalyst to extend economic vitality east of the railroad tracks. Land use was a minor SWOT workshop discussion. The property owners did express a concern about the presentation of visual models in the project process.

Funding

Multiple agencies were concerned with the cost and available funding. Additionally, the property owners were concerned that the lack of funding will drive the underpass design, resulting in an underpass and not a gateway.

Public opinion

The LRC and property owners recognize that the landowner willingness to participate in this study is a strength.

Process

All involved agencies agree that the project process is valuable, but that accommodating different stakeholder objectives and competing interests may complicate the discussion and decision-making.

Drainage and utilities

The majority of agencies discussed issue specifically related to drainage, and the desire to address these issues in this project process. The City of Louisville and the City of Lafayette are in agreement that the proximity of the study area to utilities in need of updating poses a threat.

Environmental

Environmental concerns were minor in SWOT discussions. The City of Louisville pointed out that an increase in impervious surfaces could impact drainage, and the property owners pointed out that development could impact the flood zone.

Appendix A
SWOT Categories and Related Comments

Category	Classification	City of Louisville	LRC	Boulder County	City of Lafayette	Property Owners	CDOT	RTD
42 as a 'gateway'	Strength		Highway serves as a gateway to advertise downtown and attract more visitors; Highway 42 does not compete with the main street; there is not pressure to design it like one because Louisville already has one	Interest for context-sensitive solutions, similar to the City's interest		Ready for visible and tangible change	CDOT's priority is throughput, but still considering multi-modal approaches	
	Weakness							The uncertainty of the NW rail plan; potential change to BRT
	Opportunity	Miner's field revitalization and updates; opportunity to create a livable place	Opportunity to focus on infrastructure to create a sense of place and as a means to support private-sector development through a new gateway into town	Enhancing access to transit and recreation on a regional scale		Creating a *gateway*, not just an underpass; Attracting baseball field traffic and pedestrians downtown; Creating a livable community where people work, shop and live	An opportunity to significantly increase the aesthetics of the corridor	Opportunity for agencies to work together for most suitable gateway
	Threat		Balancing capacity with all modes		Changes on 42 and the impact to other facilities (restricting/limiting access to the open space)			
Overall corridor safety	Strength			Providing safe crossing of SH 42; Could improve safe access to open space property for visitor use, agricultural operations, and management				
	Weakness	Creating a sense of safety for the underpass						
	Opportunity						Possible consolidation of access points allows flexibility in alternatives; Incorporate more RIRO intersections and medians for access control	
	Threat							
Speed	Strength			Slowing traffic and improving safety while meeting regional travel needs				
	Weakness		People travelling along the corridor want to move through as quickly as possible; Speed limit and design speed do not match					
	Opportunity	Opportunity to create a livable place				Slowing the 42 corridor, using beautification enhancements		

Category	Classification	City of Louisville	LRC	Boulder County	City of Lafayette	Property Owners	CDOT	RTD
	Threat							
Stoplights	Strength							
	Weakness	What is the relationship between the potential of a new light around Griffith Street and the South Boulder Road intersection?	People travelling along the corridor want to move through as quickly as possible					
	Opportunity	Future connections, such as from Lee Street to Pine Street						
	Threat				Signal sharing at Pascal Drive (IGA); any changes would need to be reviewed and approved			
Mobility	Strength			Boulder County transportation does not use a capacity based approach to planning	Alternate route instead of 287		12' travel lane is preferred, but 11' would be considered	
	Weakness		The users of Highway 42/residents don't have a high level of acceptance for low level of service (LOS); Recent 4 lane construction at South Boulder Road					
	Opportunity	There are alternative ways to measure traffic and mobility beyond LOS; desire from the City to use alternative metrics	Opportunity to match the Highway design speed to the posted speed and create an attraction that draws people into Louisville				Signals at Pine Street and South Boulder Road is a natural progression	
	Threat	BNSF may not allow a new vehicle crossing	Working with CDOT on congestion tradeoff		Regional impact on through travel and mobility			
Accessibility and connectivity	Strength	Highway's relative location to baseball fields, trail networks, downtown, and new development	CDOT, City, BOCO all have the same requirement that all modes of transportation need to be accounted for	Having a conveniently located train as a more sustainable alternative to automobile travel			Access control and RIRO for the multiple access points is a priority	
	Weakness	Uncontrolled access		Access control for farm access (agricultural area closed to public)	Difficulty crossing Highway 42	RTD plan shows an at-grade pedestrian crossing	Number of current access points off of Highway 42 decreases throughout	
	Opportunity	New pedestrian crossing at Miner's field	Increase multi-modal travel and pedestrian friendly environment	Possible north/south path along the eastern side of SH 42 to support active recreational uses south of the existing parking lot; opportunity to examine north-south pedestrian demand along full corridor; Enhancing access to transit and recreation on a regional scale	Access to open space and planned soccer fields	Attracting baseball field traffic and pedestrians downtown	Cannon Street, when built, will serve as another N/S through street and facilitate internal movement	

Category	Classification	City of Louisville	LRC	Boulder County	City of Lafayette	Property Owners	CDOT	RTD
	Threat	No access plan with CDOT			Access ignored on the east side of Highway 42			
Street edge safety	Strength			Providing safe crossing of SH 42				
	Weakness	Highway profile should not be altered	Currently unsafe corridor			Guardrail on west side of Highway north of South Boulder Road keeps bikers very close to traffic		
	Opportunity					Creating a walkable environment the whole length of the west side		
	Threat							
Sidewalks	Strength							
	Weakness	Properties with differing elevation				No crossing north of South Boulder Road (east/west trail connection)		
	Opportunity					Creating a walkable environment the whole length of the west side		
	Threat							
Pedestrian access	Strength	Increases in pedestrian access in all directions along and across Highway 42		Providing safe crossing of SH 42; May enhance access to local historic site for local residents				
	Weakness	ADA design challenges	People's current orientation is north/south not east/west; The pedestrian challenge is to get people from the east side of 42 to the west side of the Highway		Mixing pedestrians with the *Highway*	Pedestrian connection on Pine Street to downtown; RTD plan shows an at-grade pedestrian crossing		
	Opportunity		Opportunity to tie the east side of the tracks and ball fields to the rest of the community; Pedestrian access along Highway 42 is needed	Manage desire lines for future pedestrian access to the downtown rail station from the east side of SH 42		Potential for a pedestrian underpass for 42	Opportunity to provide safe connection across 42 for pedestrians	
	Threat		Some people may perceive that the City is putting too much priority on pedestrians in a Highway Corridor			At-grade pedestrian crossing of 42		
Underpass	Strength	Emergency vehicle access is not needed for the pedestrian underpass; access exists at Griffith Street over the railroad tracks				Key infrastructure and catalyst to east side development is underpass/ gateway		

Category	Classification	City of Louisville	LRC	Boulder County	City of Lafayette	Property Owners	CDOT	RTD
	Weakness	It is critical to keep pipes in the same location under the RR to avoid a long process with BNSF				Infrastructure needs to be addressed		
	Opportunity			Potential for pedestrian grade separated crossing of SH 42		Creating a *gateway*, not just an underpass	Phased pedestrian connections (signal then underpass)	
	Threat	No vehicle access at the under pass; limit future; Narrow crossing may be underwhelming; cost-effective, but not considering the 50 year vision			Underpass flooding	Funding will drive the underpass design		
Trail Connections	Strength	Ability to provide access to trail network		Could improve safe access to open space property for visitor use, agricultural operations, and management	Trail connection from Indian Peaks to rail; trail connections to station		An asymmetrical profile is okay to accommodate a bike lane/shoulder	
	Weakness	No true north/south trail connection		A general concern is the overdevelopment of new trails, i.e. minimal use, at the expense of agricultural lands.		No crossing north of South Boulder Road (east/west trail connection)		
	Opportunity	Creation of new trails connections to reservoir and open space		Integration of a trail (from Short Street vicinity) through the open space and future soccer area	Incorporating a maintenance/access road as a trail along the proposed Urban Drainage project; required 8 foot access road to facilities		Opportunity to incorporate bike lanes	
	Threat							
Transit	Strength			Having a conveniently located train as a more sustainable alternative to automobile travel				
	Weakness							Reality of future rail
	Opportunity		The potential connection of the commuter rail station and bus station to downtown	Could include regional transit improvements				
	Threat		The introduction of buses can slow traffic	Development vision relies on rail implementation whose timeline and cost is uncertain and increasing		Uncertainty with FasTracks; RTD fence design and it's compatibility with the noise wall	Reality of future rail	
Cycling	Strength	Regional bike route and accommodating experienced and recreational cyclists						

Category	Classification	City of Louisville	LRC	Boulder County	City of Lafayette	Property Owners	CDOT	RTD
	Weakness					Guardrail on west side of Highway north of South Boulder Road keeps bikers very close to traffic		
	Opportunity		Possible soft surface trail on the east side of Highway 42	Possible north/south path along the eastern side of SH 42 to support active recreational uses south of the existing parking lot; opportunity to examine north-south pedestrian demand along full corridor				
	Threat							
Physical constraints and right-of-way	Strength	Minimal changes are needed south of Pine Street on the Highway		Interest for context-sensitive solutions, similar to the City's interest				
	Weakness	Location of Comcast regional center; It is critical to keep pipes in the same location under the RR to avoid a long process with BNSF; Miner's field is held sacred and cannot be altered	Limited right-of-way	Large farm equipment needs to be able to access the open space; new road design would need to accommodate this (i.e. roundabouts at farm entrances may not be a workable solution)	Limited right-of-way (80 feet near Miner's Field)	Lingering strange deed restrictions on properties (such as no alcohol sales or consumption)	Lack of right-of-way	Lack of right-of-way and potential need for BRT lane
	Opportunity							
	Threat	BNSF right-of-way includes Front Street		Any changes involving Mayhoffer property on the southeast corner of the study area will be challenged by landowner and interactions will likely be difficult	Quality of surveying			
Open space	Strength			Location of open space in the regional context (regional trail connection, community buffer)	Location of open space			
	Weakness		Multi-jurisdictional open space	Adequate management planning to accommodate additional use and uses has not necessarily occurred (e.g. community garden parking designed for garden users only, not ball fields or overflow rail station parking)				
	Opportunity			Opportunity to enhance connectivity between Miner's Filed and facilities on Harney Lastoka Open Space	Access to open space and planned soccer fields			

Category	Classification	City of Louisville	LRC	Boulder County	City of Lafayette	Property Owners	CDOT	RTD
	Threat			Any changes to the existing management plan would require the approval of 9 political bodies	Restricting/limiting access to the open space			
Parking (On-street, by baseball fields)	Strength		When the ball fields are being used (typically nights and weekends) there is less traffic on Highway 42 and an opportunity to share parking					
	Weakness			Adequate management planning to accommodate additional use and uses has not necessarily occurred (e.g. community garden parking designed for garden users only, not ball fields or overflow rail station parking)				
	Opportunity					Shared parking and development opportunities		
	Threat			RTD future rail parking on east side of SH 42 makes a change to the existing management plan/agreement for the property			The idea of on-street parking, and how it impacts operations and delay	
Roundabouts	Strength							
	Weakness			Roundabouts may provide better cross-vehicle access, although may not be as beneficial for bicycles, pedestrians, and farm equipment.	Required ROW needed for a roundabout			Many bus designs would have difficulty navigating roundabouts
	Opportunity					Desire to study a roundabout at Pine Street	Exploring alternative intersection designs; roundabout and frontage road included	
	Threat							
Land use	Strength		Established land use from previous plans					
	Weakness			Would additional trail(s) (north-south), overflow parking, and other potential changes unintentionally prompt or constitute a change of use upon the Harney-Lastoka Open Space?		New code is not as flexible as needed to attract developers; needs to be changed		
	Opportunity					Reworking of commercial zoning by Paschal Drive		

Category	Classification	City of Louisville	LRC	Boulder County	City of Lafayette	Property Owners	CDOT	RTD
	Threat					Presentation of land use in visual models need to be sensitive to zoning		
Economics	Strength		The City sees an economic opportunity for those travelling on 42 to visit Louisville	Could encourage additional use of existing facilities		Economic vitality in Louisville		
	Weakness							
	Opportunity		If the train is coming, bus traffic and awareness of Louisville will increase			Extending vitality east of the railroad tracks; shared parking near development opportunities		
	Threat					Design elements such as roundabouts and medians; medians will prohibit retail		
Funding	Strength							
	Weakness		Lack of funding and budget			How to plan for the unknown (RTD funding and timeline)		Lack of funding
	Opportunity		If there is consensus and clear definition of the project, the money can be sought after					
	Threat	Cost!	Fiscally constrained project			No funds; Funding will drive the underpass design		
Public opinion	Strength		Willingness of, and ability to partner with, landowners along the highway			Landowner buy in and willingness to participate in the study		
	Weakness		City cannot raise the level of expectation to a level that they can't deliver on					Public frustration with rail indecision
	Opportunity	Chance to engage the residents and the public						
	Threat	Presenting options to the public that raise expectations too high; Need to be cautious of what language is used to describe the project	Narrow travel lanes and certain designs may not pass the litmus test developed for roadway development in the City; Public awareness for the project	There are newly elected official in most jurisdictions and new county commissioners next fall		So many interests and desires require a priority list		
Process	Strength		The process and opportunities for discussion; A staff with great technical expertise, and a willingness to explore new ideas	Boulder County transportation does not use a capacity based approach to planning	This inclusive process; an open line of communication between agencies	People coming together for this discussion and process	Willingness to look at new technologies and ideas; The ownership of SH 42 is an open conversation; CDOT would be willing to give the road back to the City, or multiple jurisdictions	Willingness to work with all involved stakeholders; specifically the City

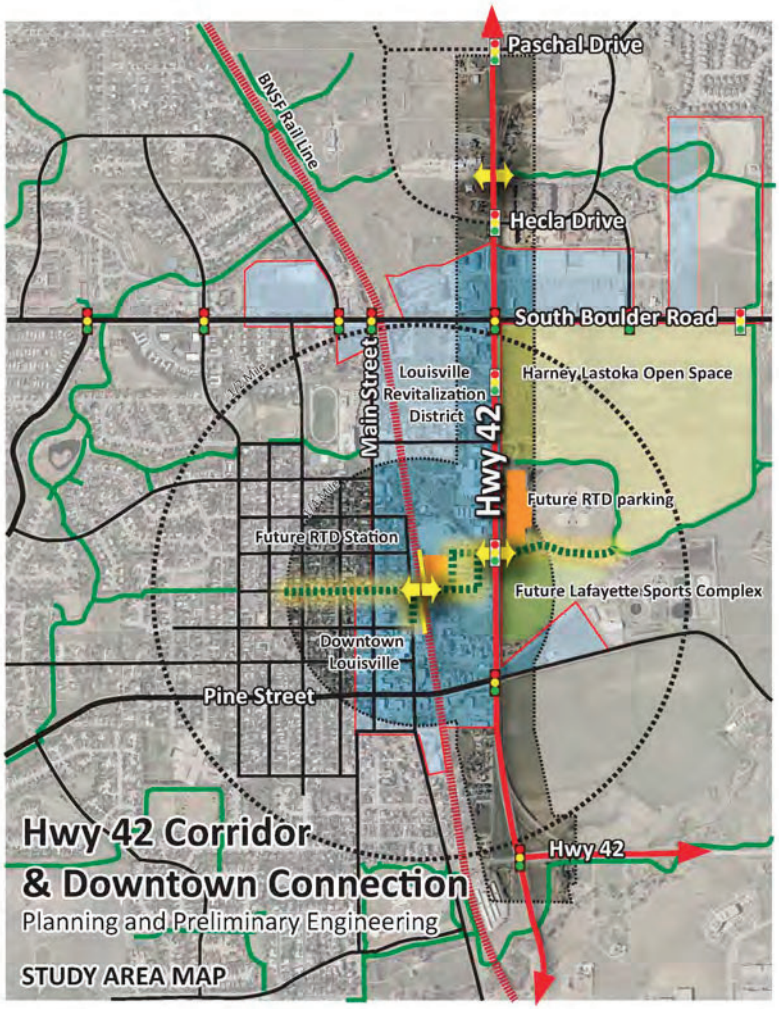
Category	Classification	City of Louisville	LRC	Boulder County	City of Lafayette	Property Owners	CDOT	RTD
	Weakness	Project requires maintaining a long-term perspective and considering the impact upon future plans	There is not a real focus on exactly what the City wants; need to define a clear project objective and develop consensus			Just another plan… lack of action	In order to make informed decisions, CDOT needs accurate projections for ADT and truck traffic	Uncertainty of rail and NW corridor
	Opportunity	Chance to consider alternative designs (a jug handle is one example); Chance to engage regional stakeholders; treat this project as a regional project; Opportunity to think long-term and be visionary	The City wants this to be pedestrian and multi-modal and feels that CDOT wants the same; this project will be a discussion of details			Opportunity for phasing improvements		
	Threat	Consensus requires the involvement of many agencies in the region, perhaps with conflicting interests; Working with BNSF is a slow process	There may be conflicting objectives between stakeholders that may make design outcomes which are desirable to the City difficult to attain; Too much focus on other users of Highway 42, and not the Louisville residents	In Lafayette, sale of open space land or easements is interpreted to require approval by the voters; and, the Harney-Lastoka property was purchased as open space; Tension between some of the involved agencies	Competing interests among involved agencies	So many interests and desires require a priority list	Agreement on an appropriate LOS; Accommodating different stakeholder objectives; an example would be maintaining throughput but also creating a livable street	Coordinating with BNSF
Commercial development	Strength	Viability of commercial development at Highway 42 and South Boulder Road	Natural proximity of the Highway to Old Town – use redevelopment as a way to signal what Louisville is about; The land on east side is open space, so the west side has the opportunity to attract the commercial attention of the corridor			Economic vitality in Louisville	Louisville already has a main street, so Highway 42 is not competing, but complimenting	A permanent station can facilitate surrounding 'station-area' development
	Weakness							
	Opportunity							
	Threat		Lack of access to capital, if no one is able to redevelop right now	Development vision relies on rail implementation whose timeline and cost is uncertain and increasing		Design elements such as roundabouts and medians; medians will prohibit retail		
Drainage	Strength							
	Weakness	The drainage network needs improvements and updating	Proximity of drainage swale		Drainage issues and concerns		MS4 detention cannot lie within the highway template	
	Opportunity	Partnering with the drainage study for concurrent work				Time to focus and prioritize drainage		
	Threat	Drainage updates would have to be maintained by the City; Timeframe on the drainage study may be incompatible with this study					Encountering MS4 permitting and regulations	
Environmental	Strength							
	Weakness					Flood zones impact		

Category	Classification	City of Louisville	LRC	Boulder County	City of Lafayette	Property Owners	CDOT	RTD
	Opportunity			Reconfiguration of irrigation system (storage and delivery from Hecla Lake to open space) may change of agriculture operation slightly and create some design flexibility that benefits both the 42 corridor and the agricultural operation				
	Threat	Increase of impervious surfaces and how that could impact drainage				Need for a quiet zone through the downtown area		
Utilities	Strength							
	Weakness	Location of regional Xcel line along 42; utilities locations under the railroad			Proximity of major utility lines; Location of the gas pipe which is in poor condition	Tap fee structure		
	Opportunity	Reroute and update utility lines concurrently with this project; lines should connect to 42 in the same location	Opportunity to focus on infrastructure to create a sense of place and as a means to support private-sector development through a new gateway into town					
	Threat							

KICK-OFF MEETING

INTEGRATED INFRASTRUCTURE IMPLEMENTATION PLAN

NOVEMBER 9, 2011 – 6:00 PM



The Plan: The City of Louisville has contracted with Atkins North America, Inc. to complete an Integrated Infrastructure Implementation Plan (3IP) for the Louisville FasTracks Station Area and Highway 42 Corridor. This planning effort has two components:

1. Initial design of a South Street connection between Downtown Louisville and the Revitalization District.
2. A context sensitive and multimodal corridor design and implementation plan for Highway 42 between Lock Street and the northern City limits (Paschal Drive).

Kick-Off: The kick off meeting will introduce the project and answer questions such as;

- What is an Integrated Infrastructure Implementation Plan?
- Why is the City completing the Plan and why is it important to me?
- What will the end product look like?

When: November 9, 2011 at 6:00 PM

Where: City Council Chambers at City Hall – 749 Main St. Louisville

If you have questions please contact Gavin McMillan via email at gavinm@louisvilleco.gov or by phone at 303-335-4594.

From:	Joshua Cooperman
To:	City Council
Cc:	Kurt Kowar
Subject:	Comments on transportation planning and funding
Date:	Tuesday, February 28, 2023 8:59:20 AM

Dear members of the Louisville City Council,

Tonight the Public Works Department will present on the City's Pavement Management Program and the Future 42 Project, and you will discuss long-term planning and funding for these transportation initiatives. I wish to advocate for changes to the operation of the Pavement Management Program, and I wish to reiterate some suggestions for the Future 42 Project.

As we make long-term (and short-term) decisions concerning the City's transportation system, we should put environmental sustainability front and center. Transportation is responsible for approximately one third of Louisville's greenhouse gas emissions, a percentage consistent with the national average. While the transition to electric vehicles is underway, electric vehicles still result in greenhouse gas emissions through their manufacturing and charging. The most environmentally-friendly modes of transportation are walking and bicycling (and scootering, skating, et cetera), and, fortunately, walking and bicycling are great options in our small town. To reduce Louisville's carbon footprint, we should thus do all that we can to promote greater rates of walking and bicycling for transportation.

One way to promote greater rates of walking and bicycling is to provide high quality, comprehensive infrastructure for walking and bicycling. The City has prioritized walking and bicycling infrastructure, so Louisville does have good walking and bicycling infrastructure, but there is still considerable room for improvement. I would be happy to provide specific suggestions for infrastructure improvements beyond the ideas contained in the City's Transportation Master Plan, many of which could be implemented at relatively low cost.

There are various other benefits to improving the City's pedestrian and bicyclist infrastructure. Better infrastructure will make our roads safer for pedestrians and bicyclists, and walking and bicycling are good for our health. Greater rates of walking and bicycling, if accompanied by lower rates of driving, will also reduce wear and tear on the City's roads and reduce demand for car parking.

The City's roads (and buildings, parks, et cetera) occupy land that was once natural habitat, and the City's roads (and parking lots, many of its building's roofs, et cetera) absorb and reradiate considerable heat from the sun. To mitigate this heat island effect, especially as our climate continues to warm, the City should reduce the area covered by or shade such heat-absorbing surfaces to the extent possible. Road diets, where applicable, are one means to achieve this aim. If excess pavement is replaced with planted medians, then we can potentially shade neighboring pavement and restore the natural habitat that once existed.

Regarding the City's Pavement Management Program, I make the following recommendations.

1. Whenever a road is being considered for repair, we should assess this road for improvements to its pedestrian and bicyclist infrastructure. Any and all reasonable improvements should be prioritized for inclusion in the contract to repair this road.
2. Whenever a road is being considered for repair, we should assess this road for a diet to

allow for planted median improvements, enlargement, or construction.

As I understand, the City of Boulder altered the structure of its pavement management program along the lines of my first recommendation.

I do not mean to suggest that we substantially sacrifice upkeep of the City's roads to finance pedestrian and bicyclist infrastructure: the City should of course maintain its valuable infrastructure, especially since virtually all residents, myself included, like roads in good repair. For the reasons presented above, though, the City should support improved and expanded pedestrian and bicyclist infrastructure; incorporating such support in the City's Pavement Management Program would create a consistent mechanism for addressing pedestrian and bicyclist infrastructure.

Regarding the Future 42 Project, I make the following recommendations.

1. Prioritize the improvement and construction of pedestrian and bicyclist infrastructure along Route 42 as much as possible.
2. Refrain from expanding Route 42 to two lanes of traffic in each direction except to allow for dedicated public transit lanes.

To my knowledge, there are sections of Route 42 that have never had sidewalks or bicycle lanes. Moreover, in its current state, despite being an arterial road, Route 42 does not receive much pedestrian or bicyclist traffic because it is not particularly pleasant (and probably not comparatively safe) to walk or bicycle along Route 42.

For the reasons presented above, the City should work to reduce automotive traffic on its roads, including Route 42, not accommodate more traffic on its roads. The City should divert funds for expanding Route 42 to traffic demand management initiatives, like pedestrian and bicyclist infrastructure, bicycle and scooter sharing systems, and public transit. Such initiatives would have a far more positive impact on our small town.

Thank you for reading and considering my thoughts.

Best,
Josh

From: Michael B. Menaker
To: Kurt Kowar
Cc: City Council; Jeff Durbin
Subject: Re: Hwy 42
Date: Monday, February 27, 2023 2:25:20 PM

Thanks Kurt,
Sadly, then as now, there is no funding identified.
I am skeptical that there ever will be.

I would add that worrying about accommodation computer rail is pointless.
We're more likely to be hit by a giant asteroid than see commuter rail along the corridor.

Best,
M
--
Michael B. Menaker
1827 W Choke Cherry Dr
Louisville, CO 80027
303.588.8781

> On Feb 27, 2023, at 2:17 PM, Kurt Kowar <kurtk@Louisvilleco.gov> wrote:
>
> Michael,
>
> Thanks for reaching out and sharing your perspectives. The 2013 Gateway Plan was certainly a great vision and pieces of it still are.
>
> The institutional memory was not lost. I was part of that corridor planning process as well.
>
> Traffic counts and projections were updated in 2018 and reviewed along with more detailed traffic simulations to ensure that the road network could operate in a satisfactory condition. Links to that presentation and a video of the traffic simulation for 3 and 5 lane scenarios are below. The video is the easiest way to "see" traffic management.
>
> https://laserfiche.louisvilleco.gov/WebLink/0/doc/436997/Page1.aspx
>
> https://laserfiche.louisvilleco.gov/WebLink/0/edoc/437913/City%20Council%20Agenda%20and%20Packet%202019%2001%2008%20VIDEO%20HWY%2042.mp4
>
> Ultimately, at Hwy 42 and Short Street we built in recommended components with that project in 2018/2019.
>
> But there are also components of the 2013 plan that became outdated or were deemed not feasible through updated modeling and/or CDOT resistance of that vision.

- A bus route is not feasible on the 3 lane configuration with the traffic volumes being experienced. The stop in the lane of traffic essentially shuts down traffic operations. In addition, a 3 lane configuration precludes Bus Rapid Transit operations that could include bus lane or queue jumps at traffic signals to ensure transit schedules and efficiency.
- A 3 lane congested road does not provide for good connectivity of surface crossings as pedestrian crossings shut down traffic operations causing frustrated and unsafe conditions. This really falls apart if light rail comes in and the parking is on the other side of Hwy 42 from the Rail Station. The City allowed development where previous parking was to be located.
- A 3 lane congested road with a basic painted bike lane does not provide a level of comfort or safety for all but the more advanced bicyclists.
- Constraints with CDOT and Boulder County limited what the 2013 plan could accomplish from a multimodal stand point.
- The 2013 Gateway Plan also envisioned a secondary road network from Kaylix to Pine Street, parallel to Hwy 42. This road network never came to fruition for various reasons and therefore made some portions of the plan become obsolete.

The City also completed the 2019 Transportation Master Planning process that set goals for mobility for all modes of transportation and all ages and abilities of users. The 2013 Gateway Plan was reviewed as part of this process. The 2019 TMP had several public input process components and can be viewed below:

https://www.engagelouisvilleco.org/transportation-master-plan

Generally corridor plans are reviewed every 10 years to ensure planning components and goals are still relevant.

The updated Future 42 Plan adopted late last year (9 years after the 2013 Plan) ensured partner agencies such as CDOT, Boulder County, and RTD were bought into the vision as well as incorporating updated guidance polices of the 2019 TMP.

The 5 lane sections of Hwy 42 from Pine to South Boulder Road were planned to provide for:

- Efficient future transit route service including queue jumps.
- Provides room to manage traffic queues that allow for bike priority traffic signals at smaller intersections along the corridor.

Additional benefits in the Future 42 Plan include:

- Grade separated underpass crossings at South Street and South Boulder Road.
- Protected bike lanes in both directions providing safety for all ages and abilities and improved comfort levels.
- Sidewalks on both sides of the corridor for all ages and abilities.

More efficient movement of vehicles through the corridor and from side streets.

Data indicates that the majority of the traffic in the corridor was from Lafayette and Louisville residents, not cut through traffic. These improvements implemented over time provides for safe passage of all modes of users at all ages and abilities and increased connectivity between the communities, their residents, and centers of commerce.

I'd also like to add that "livability" has been taken to heart. The City has made lane reductions and installed buffered bike lanes to Pine Street and Cherry Street. Safer pedestrian crossings have been installed along South Boulder Road.

Feel free to reach out on my cell (303-419-7445) if you want to discuss more. I'm always happy to catch up somewhere and discuss the pros and cons of all of these topics.

Hope all is well and I hope this additional information helps.

Thanks,

Kurt

From: Michael B. Menaker <michael@Hostworks.net>
Sent: Friday, February 24, 2023 2:53:02 PM
To: City Council <Council@louisvilleco.gov>
Subject: Hwy 42

Mayor and Council,

One of the most frustrating things to a long-time observer and participant in City government and planning
is the loss of institutional memory…and the resulting reinvention of the wheel. Over and over again.

In 2012, after extensive public outreach and process, including waling tours, public “vision” meetings, LRC meetings,
consultants studies and more; the City defined its goals for Hwy 42 thusly:

"Louisville Planning Director Troy Russ said the emphasis in the preferred design of Colo. 42 — which would pick up a middle turn lane in addition to other traffic flow improvements — is being put on “livability” in the corridor over pure mobility through it.”

My first question would be “What changed?"

Five traffic lanes were rejected in favor of three, signals envisioned at most intersections and the emphasis was placed on making Hwy 42 work for Louisville, not the pass through traffic.
At the tine the difference in travel time along Louisville's section of Hwy 42 from 5 lanes to 3 was calculated at 21 seconds.

Extensive plans and diagrams were created…and yet, now, we once again seem to be reinventing the wheel.
It would serve Louisville if, before making further decisions, Council and Staff made a concerted effort to review the work done in the past.
And, extract from that lessons and conclusions, still applicable today.

While the old City website the42gateway.com is no longer active, surely the contents were archived and can be revisited.

To start things off, I attach some key documents from my personal files.
It would be shameful to wast all the work, time, and treasure it took to create these and more.
--
Michael B. Menaker
1827 W Choke Cherry Dr
Louisville, CO 80027
303.588.8781

==CAUTION: EXTERNAL EMAIL==

From: Kurt Kowar
To: Michael B. Menaker
Cc: City Council; Jeff Durbin
Subject: Re: Hwy 42
Date: Monday, February 27, 2023 2:17:52 PM

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