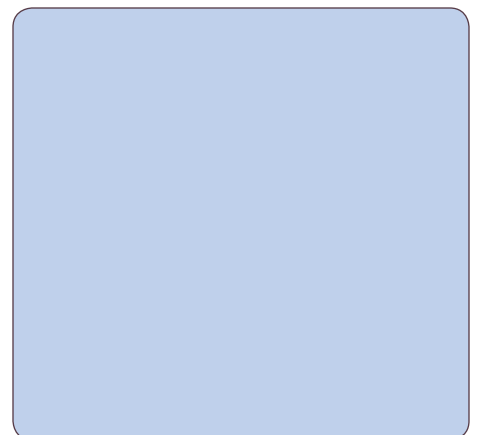




# ***Dry Gulch Trail*** *Master Plan*

*June 2012*



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## Acknowledgments

The Dry Gulch Trail Master Plan is the culmination of a twenty month planning process that involved City of Lakewood staff, the consultant team, and the general public. The individuals listed below contributed substantially by sharing their time, skills, knowledge, and thoughtful participation. In addition, numerous City residents shared their knowledge and offered constructive comments during public meetings.

### **City of Lakewood Staff**

Ross Williams  
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Accepted for use by the City of Lakewood Department of Community Resources  
June 1, 2012



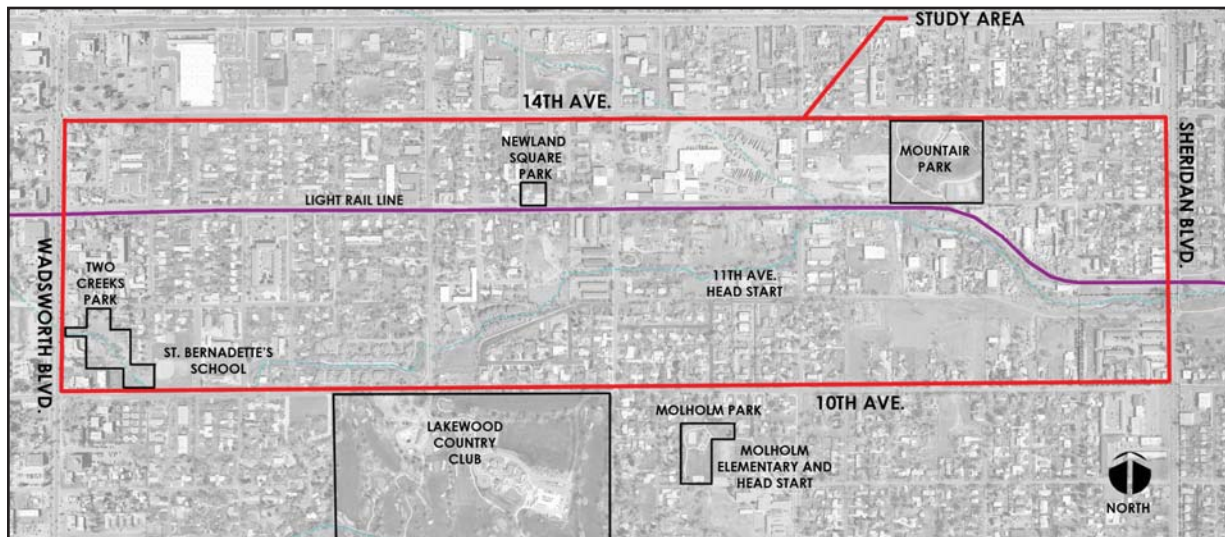
# INTRODUCTION



## Project Background

The City of Lakewood proposed conducting the Dry Gulch Trail Master Plan (the Master Plan) in 2009. The need for this study was highlighted during the planning process for the West Corridor Light Rail (West Corridor) project proposed by The Regional Transportation District (RTD). The West Corridor is part of the FasTracks program, an expansion of mass transit through the Denver Metro Area, including the City of Lakewood.

The study area for the Master Plan is between Sheridan Blvd. and Wadsworth Blvd.; and between W. 10th Ave. and W. 14th Ave. Through this study area, the light rail line will primarily run along W. 13th Ave., a road that formerly served as the main east-west route for cyclists through the neighborhood as part of the regional D-10 bicycle route. While a multi-use trail is planned along portions of 13th Ave. as part of the West Corridor project, it will not provide a contiguous off-street recreational east-west trail connection through the neighborhood.



Map of Study Area

Within the study area, the West Corridor project will also include new light rail stations at Sheridan Blvd., Lamar St., and Wadsworth Blvd. It is anticipated that the light rail will bring new business, commercial, and residential development. However, new bicycle and pedestrian connections within the neighborhood, including connections to the light rail stations, will be required for the neighborhood to easily access future improvements. This is particularly true of the Lamar St. station which is designed to be accessed by pedestrians and bicyclists only, with no parking facilities.

Regardless of the connectivity issues related to FasTracks, the neighborhood within the study area has very few off-street bicycle or pedestrian facilities. Travel through most parts of the neighborhood as a cyclist or pedestrian requires using the shoulder of the roadway, often an unpleasant or hazardous experience. The neighborhood has demonstrated a need and a desire for a trail system that will provide not only safe connectivity throughout the neighborhood, but also opportunities for recreation.

The City of Lakewood obtained a State Trail Planning Grant in 2009, helping to fund this master plan effort. The Master Plan is the next step to realizing this vital trail connection project in this neighborhood.

### **Purpose and Goals of the Plan**

The purpose of the Master Plan is to provide a vision for future trail improvements within the study area.

The primary goal of the Plan is to:

- Provide a safe, off-street, multi-use trail connection between Wadsworth Blvd. and Sheridan Blvd. To the east, the trail should connect to the Lakewood/Dry Gulch Trail that extends from Denver to the new underpass at Sheridan Blvd.



**Bus stop on W. 10th Ave. looking west from Gray St.**

Additional goals of the plan include:

- Provide connections to the Wadsworth Blvd., Lamar St., and Sheridan Blvd. light rail stations.
- Improve the general circulation throughout the neighborhood by providing connections to schools, parks, and other important use areas.
- Provide a connection from the neighborhood to the regional trail system, specifically the South Platte River Trail/Colorado Front Range Trail.
- Identify potential conflicts in the design or use of trails.

### **Planning Process/Time Line**

The design team and City of Lakewood staff developed an effective and efficient planning process for the Master Plan. The process included:

- *October 2010* - Kick-off Meeting: The design team met with City of Lakewood staff to clarify the purpose and distill the goals of the master planning process
- *November-December 2010* – Site visits, data collection, document review, developed existing conditions plan and trail opportunities plan
- *December 2010-March 2011* – Review meetings with City of Lakewood staff, revised plans
- *April, 2011* – Public Meeting #1: A public meeting was held at Molholm Elementary School to inform the public about goals of the project and solicit public comment on work to date. City of Lakewood staff and the consultant team presented a brief overview of the project area, the goals of the project, the existing conditions plan, and the trail opportunities plan. See the Appendix for full notes from this meeting

- *May, 2011* – Developed trail master plan and trail priorities plan
- *June, 2011* – Public Meeting #2: The second public meeting was held at Mountair Christian Church. City staff and the consultant team presented the work to date on the project and the trail priority plan. See the Appendix for full notes from this meeting
- *July-August, 2011* – Developed master plan report
- *April, 2012* - Public Meeting #3: The third public meeting was held at Molholm Elementary School. City staff and the consultant team presented the work to date on the project, the plans and the photo renderings that were presented at the previous public meeting. See the Appendix for full notes from this meeting
- *May, 2012* - Finalized mater plan report



A photograph of a cyclist riding away on a paved path. The cyclist is wearing a black jersey, black shorts, and a black helmet. The path is bordered by a low stone wall on the right and green foliage on the left. The text "PREVIOUS PLANNING STUDIES AND DESIGNS" is overlaid in white, bold, sans-serif capital letters.

# **PREVIOUS PLANNING STUDIES AND DESIGNS**



## Previous Planning Studies and Designs

As part of the planning process, the design team reviewed several previously prepared planning studies that included information or recommendations in the study area that were pertinent to the Master Plan.

### **Molholm Area Plan – adopted by the City of Lakewood in July, 1996**

This plan identified three main issues with corresponding goals and strategies for attaining them. Two of the three issues and subsequent goals and strategies are relevant to the Dry Gulch Trail Master Plan:



#### *Community Resources*

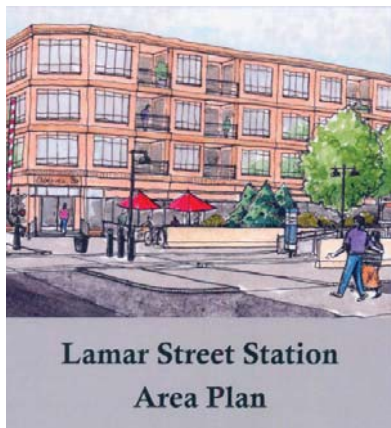
Goal #3: Enhance parks, open space, and recreational amenities in the area

Strategy #3: Establish a trail system within the area. Incorporate paths for pedestrian activity along open space areas such as Lakewood Gulch, Dry Gulch, 13th Ave., and the perimeter of Lakewood Country Club that would permit a recreational loop through the area (p. 16).

#### *Traffic and Public Safety*

Goal #3: Increase comfort level for children and the community

Strategy #2: Identify areas where pedestrian safety is a problem; work to alleviate these problems by constructing pedestrian paths and increasing street lighting (p.22).



### **Lamar Street Station Area Plan - adopted by the City of Lakewood in March, 2010**

This station will be a walk-up station without parking facilities. The formation of this plan included eight planning workshops and two community open houses. This plan stated that the desired connections from this station shall be: Molholm Elementary School, Mountair Park, and Two Creeks Neighborhood, among others. These connections shall be "clearly marked, well [lit], safe, and attractive for people of all ages and abilities" (p.6). This plan also states that "pedestrian and bicycle connections along North Dry Gulch and Dry Gulch [should] be provided" (p.6). The plan in this report shows pedestrian/bicycle path connections running north-south along Pierce St., Lamar St., and Harlan St.

It is noted that the main pedestrian connections from the Lamar station to Colfax Ave. and the Rocky Mountain College of Art and Design are along Lamar St. and Kendall St. (p. 2).

## Previous Planning Studies and Designs

### Lakewood Bicycle System Master Plan

Recommendations from this plan that are relevant to this study include those for 14th Ave. (proposed on-street bicycle lane), 13th Ave. (proposed bicycle path), Lamar St. (proposed on-street bicycle lane), Harlan St. (proposed on-street bicycle lane), Pierce St. (existing on-street bicycle lane), and West 10th Ave. (proposed and existing on-street bicycle lane).

Based on open house comments received during this planning study, residents want : [improved] recreational bicycle path connections, [provision of] safe bicycle crossings, [enhanced] bicycle to school programs, [coordination] with RTD's West Corridor, and better connections to other cities (p. 29).



**Cherry Creek Regional Trail  
Denver, Colorado**



**Kinney Run Trail  
Golden, Colorado**

According to the survey conducted for this plan:

- 52% of bicyclists ride daily;
- 45% of bicyclists ride weekly;
- 59% of bicyclists ride for recreational purposes;
- 13% ride for errands;
- 43% prefer to ride on paths through parks and open space;
- 19% prefer to ride on on-street bicycle paths that parallel major streets (p.28).

### US 6/Wadsworth Preferred Alternative Preliminary Design – Colorado Department of Transportation (CDOT)

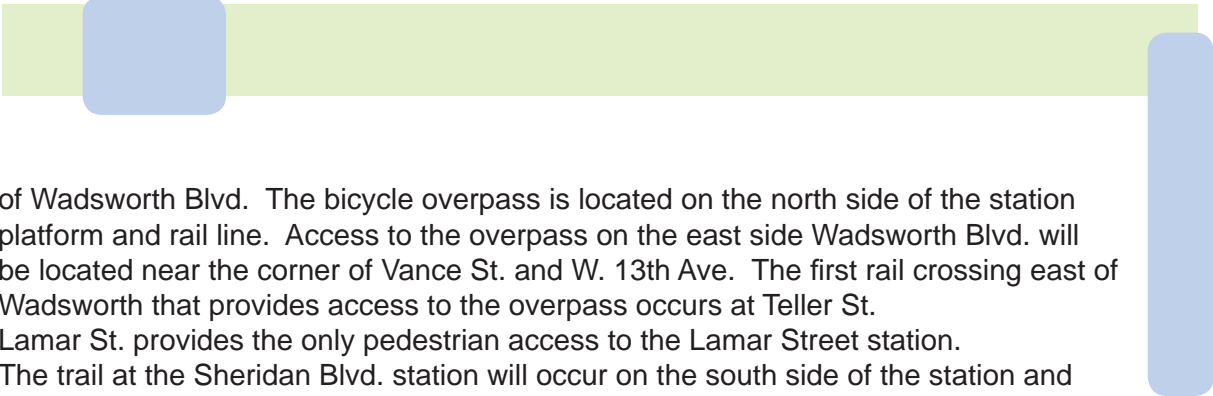
In this preferred alternative plan, CDOT will construct a 10' wide multi-use trail separated by a 8' buffer along both sides of Wadsworth Blvd. CDOT also proposed a raised median that will limit left hand turns from Wadsworth Blvd. to some of the cross streets and businesses. Limiting these turns could help to improve the safety of users on the multi-use trails along Wadsworth Blvd.

### FasTracks West Corridor Construction Plans - RTD

The plans were reviewed to gain an understanding of the pedestrian and bicycle connectivity directly around the light rail stations, and the trails that will be built as part of the project.

Below is a summary of the information pertinent to the Master Plan:

- The Wadsworth Blvd. light rail station will include a grade separated trail overpass



of Wadsworth Blvd. The bicycle overpass is located on the north side of the station platform and rail line. Access to the overpass on the east side Wadsworth Blvd. will be located near the corner of Vance St. and W. 13th Ave. The first rail crossing east of Wadsworth that provides access to the overpass occurs at Teller St.

- Lamar St. provides the only pedestrian access to the Lamar Street station.
- The trail at the Sheridan Blvd. station will occur on the south side of the station and Dry Gulch. Current plans show the Lakewood/Dry Gulch Trail extending east from Sheridan, not west.
- There will be an 8' wide, off-street, multi-use trail installed along the north side of W. 13th Ave. from Newland Square Park to Mountair Park.

# DEVELOPMENT OF THE MASTER PLAN





## Existing Conditions Plan

The design team conducted site visits in order to develop a deeper understanding of the study area, verify existing pedestrian and bicycle facilities, and create an existing conditions plan. This plan reflects both existing items and those proposed within other planning or design projects.

### *Neighborhood Diversity*

Within the neighborhood is a mix of single family residential homes, multi-family residential complexes, commercial enterprises, and industrial uses. Along with the many uses, there is also diversity within the neighborhoods in terms of home values, income levels; and age, race, and ethnicity of residents.



**W. 11th Ave. looking west at Head Start Building, single family residences, and industrial property**

### *On-Street Bicycle Lanes/Bicycle Routes*

On-street bicycle lanes and bicycle routes are intended primarily for commuters who travel by bicycle. They provide an important connection for those users. On-street bicycle lanes do not serve the same purpose as multi-use trails however, because they are not designed as multi-user facilities and therefore do not accommodate pedestrians. They also are not appropriate for children or inexperienced cyclists.

There are several existing and proposed on-street bicycle facilities within the neighborhood. Existing bicycle lanes include W. 14th Ave., W. 10th Ave. (west of Pierce St.), Pierce St., and Lamar St. Proposed bicycle lanes include W. 10th St. (east of Lamar St.), and Harlan St. There are also two designated sections of shared use road in the neighborhood including W. 13th Ave (from Vance St. to Newland St.) and W. 11th Ave. (east of Harlan St.).



**Trail in Mountair Park**

### *Multi-use Trails*

For a trail to be appropriate for multi-use traffic, it must be among other things, a minimum of 8' wide (see page 21). Currently there are two locations within the study area that have trails that are wide enough for multi-use traffic. Mountair Park has several trails that are at least 8' wide and Sheridan Blvd. has two sections of trail that are wider than 8'.

Aside from the trails in Mountair Park, the only path in the neighborhood that does not parallel a street is located along the north edge of the Lakewood Country Club from Pierce St.

## Development of the Master Plan

to Lamar St. This path (the “Bill Coppock Trail”) is not safe for bicycle traffic however, because it is only 3’ wide.

There are several multi-use trails planned as part of other projects in the study area including: a trail paralleling Wadsworth Blvd., the Wadsworth Blvd. overpass, a trail along W. 13th Ave. from Newland Square Park to Mountair Park, a connector trail from W. 13th Ave. across the Gulch to the 11th Ave. Head Start school at 11th Ave. and Jay St., and a few small segments of trail along Dry Gulch (one north of the Head Start and another east of Harlan St.).

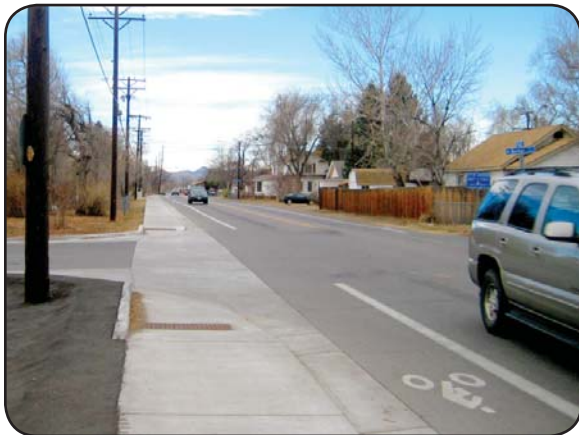
Finally, the Lakewood/Dry Gulch Trail is within the City and County of Denver jurisdiction. It runs from the South Platte River Trail west to Sheridan Blvd., spanning 2.27 miles. Currently, this trail ends at Sheridan Blvd., approximately at the boundary of City and County of Denver property. Providing a connection to this trail is very important as it will provide a critical connection for the study area into the regional trail system.



**Lakewood/Dry Gulch Trail looking east**

### *Parks/Schools*

There are five schools within the study area or immediately adjacent to it including: Jefferson County Open School, St. Bernadette School, Molholm Elementary, 11th Ave. Head Start, and Beth Jacob High School. Also within the study area there are several parks: Two Creeks Park (slated for design in the near future), Newland Square Park, and Mountair Park. Very close to the study area are Molholm Park and Surfside Pool (currently under construction as a splash park). The Lakewood Country Club is also located adjacent to the study area.



**14th Avenue looking west**

### *Streets*

14th Ave. is the most heavily used for vehicular travel in the east and west directions. Local traffic also utilizes 10th Ave. for east and west travel. Pierce St., Harlan St., and Lamar St. appear to be the most heavily used for local vehicular north and south travel. It has been noted that prior to the construction of the light rail line there was some vehicular traffic traveling through the neighborhood to bypass the busier thoroughfares. After construction began, that type of vehicular traffic has increased in order to bypass construction traffic and road closures.

### *Existing Sidewalks*

There are a few streets with existing sidewalks that are less than 5' in width and are attached to the street. Many of the streets do not have sidewalks and residents utilize the gravel shoulder on the road or on-street bicycle lane for pedestrian travel.



**Lamar Street looking south at gravel shoulder**



**13th Street with wall for light rail overpass looking east from Wadsworth**

### *RTD Light Rail*

The light rail and stations along W. 13th Ave. have a significant impact on both traffic patterns and potential trail alignments. The West Corridor, while bringing an important amenity to the neighborhood in the form of mass transportation, has also become a barrier for residents. The line prohibits travel north and south across W. 13th Ave. along most streets. The only streets that provide opportunities for pedestrians to cross the light rail line within the study area are: Wadsworth Blvd, Teller St., Pierce St., Lamar St., Harlan St., and Sheridan Blvd.







### Trail Opportunities Plan

Utilizing the information shown on the existing conditions plan, the design team created the Trail Opportunities Plan to show all feasible alignments for an east-west trail within the study area. This plan shows conceptual alignments, not exact locations of the trail. Because the study area is a well established neighborhood, there are limited options for a trail corridor. The City did not want to explore options for a trail alignment paralleling 14th Ave. because that corridor already serves as an established on-street bicycle route.

The plan identified the following alignments:

#### *Dry Gulch Alignment*

This alignment connects to the existing Lakewood/Dry Gulch Trail at the Sheridan Blvd. underpass. From there, it continues west along Dry Gulch through most of the neighborhood to Teller St. Then, it follows along the W. 10th Ave. right-of-way to the east side of Wadsworth Blvd. From there, the alignment would utilize the proposed trail along Wadsworth Blvd. north to the proposed Wadsworth Blvd. overpass.



Dry Gulch looking west toward Teller St.

This alignment offers the best opportunity for a greenway experience with an alignment that is truly separated from the roads. However, there are several implementation challenges with this alignment. The Dry Gulch channel includes some very steep slopes that would likely require structures such as retaining walls, railings, etc. Between Marshall St. and Saulsbury St., Dry Gulch runs between two separate condominium complexes whose development leaves a very narrow corridor for Dry Gulch. It is unlikely that the trail could be built along these portions of the gulch without extensive renovations to the condominium complexes. Finally, many portions of this alignment are located in private property and would require expensive property acquisitions.

#### *W. 10th Ave. Alignment*

This alignment also connects to the existing Lakewood/Dry Gulch Trail at the Sheridan Blvd. underpass. It then follows along the W. 11th Ave. right-of-way for a short distance, then continues west and south through an undeveloped property owned by Xcel (although The City is currently in negotiation to acquire portions of this property), until it meets the corner of W. 10th Ave. and Gray St. It then continues west along the W. 10th Ave. right-of-way to Lamar St. Between Lamar St and Pierce St., the alignment utilizes the existing trail easement along the north edge of the Lakewood Country Club. From there, it continues west along the W. 10th Ave. right-of-way where it follows the same route as the Dry Gulch alignment to the Wadsworth Blvd. overpass.



Rendering of Xcel property looking east

In terms of property acquisition, this alignment is likely much easier to implement than the Dry Gulch alignment because a good portion of the alignment occurs in property already owned by Lakewood, mostly in street rights of way. There will however, be challenges with constructing a trail along street rights of way. The trail design will have to accommodate local storm drainage and will likely require improvements to or renovations of the existing streets.



Rendering of Xcel property looking west

### *Connector Trail*

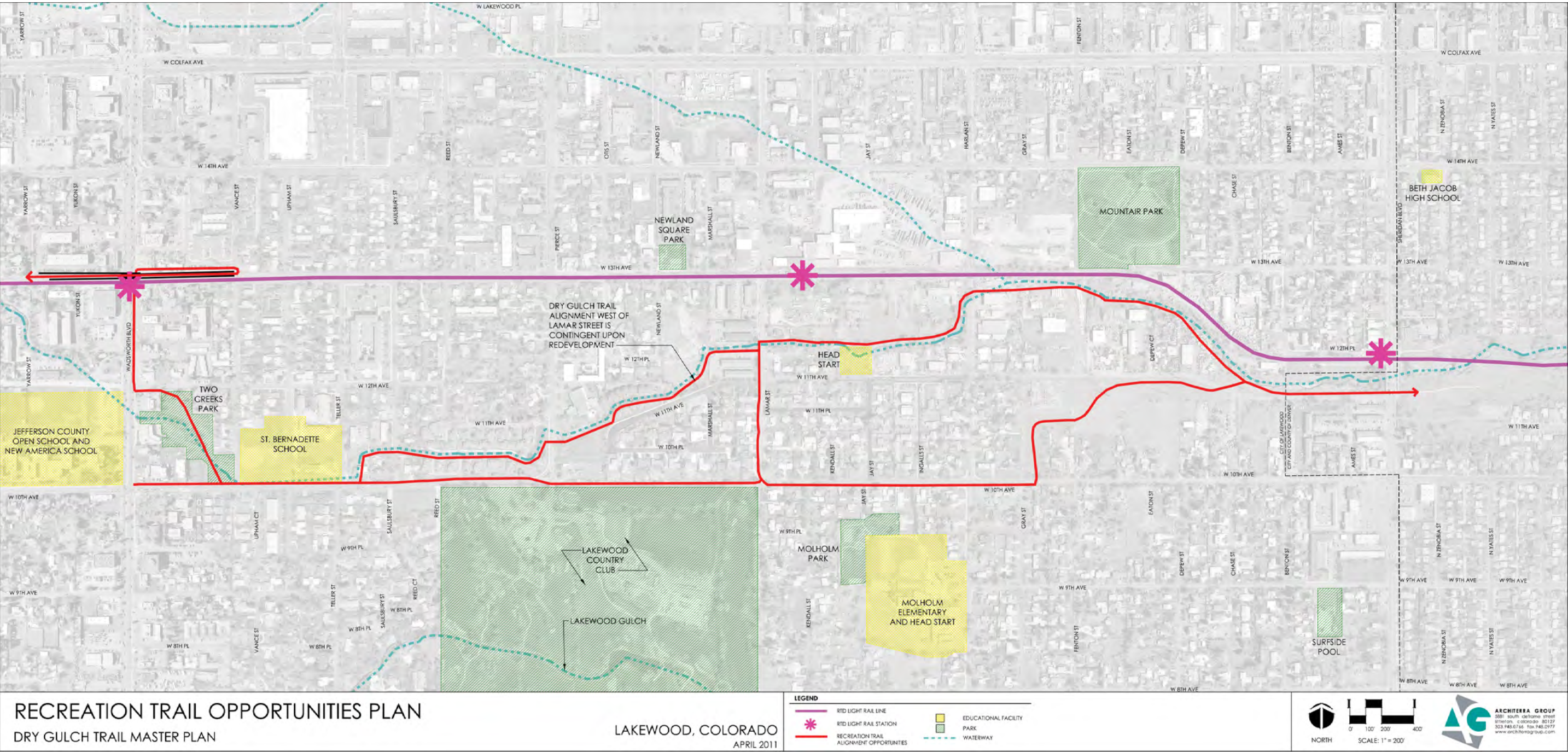
The plan also shows a connector trail option between the two alignments along Lamar St. This provides an opportunity to select the western portion of one of the alignments and the eastern portion of the other.



**Rendering of Lamar Street looking south**

This plan was shown at public meeting #1 to illustrate potential trail alignments and engage residents in discussions about the alignments they would most like to see built. In general, the public was supportive of both alignments and many people suggested that they would like to see both alignments built to provide a loop trail within the neighborhood. This suggestion coincides with the goal and strategy stated in the Molholm Area Plan. See the appendix for a full summary of public meeting #1.







### Preliminary Trail Master Plan

Based on input from the first public meeting, the design team developed a Preliminary Trail Master Plan. The plan incorporated comments from citizens received at the first public meeting.

The plan included both the 10th Ave. alignment and the Dry Gulch alignment. The Dry Gulch alignment was revised to avoid the condominium complexes. The preliminary master plan provided a primary east-west trail connection as well as a loop trail system within the neighborhood. The plan also included connector trails along Lamar St. to the Lamar St. light rail station.



Rendering of 10th Ave. at St. Bernadette's

This plan presented several options for the east-west alignment, creating the desired loop trail. This plan also showed priorities for the construction of the various alignments since there were multiple options.

The Preliminary Trail Master Plan was presented at public meeting #2 where there was general support for it. However, some residents were concerned about modifying the Coppock Trail along the north side of the Lakewood Country Club to allow for safe multi-use traffic. Over the next several months, the City heard more concerns about the Coppock Trail from residents, so a third public meeting was scheduled to review the Preliminary Trail Master Plan. At the third meeting, there was considerable concern from those in attendance about modifying the Coppock Trail.







### Trail Master Plan

Based on the input from the third public meeting, the design team developed a Trail Master Plan. This plan incorporates comments from citizens received at all three public meetings.

The Trail Master Plan includes an east-west trail alignment and several important connections within the neighborhood. The recommendations include portions of both alignments shown on the Trail Alternatives Plan, but the alignments have been refined.



Rendering of 10th Ave. looking west between Harlan St. and Gray St.

### *Dry Gulch Trail Alignment*

The Dry Gulch alignment provides the primary east-west trail through the neighborhood. This was selected as the ideal alignment for several reasons. First, it meets the primary goal of the project which is to provide an off-street trail connection that runs east-west through the neighborhood. Second, this alignment does not require the modification of the Coppock Trail. Finally, portions of this trail are already constructed or planned to be constructed as part of another development. This leaves smaller segments of trail that need to be constructed as part of this project to complete the connection.

This trail will serve as the backbone for the trail system in the neighborhood. In addition to providing the east-west connection, it provides direct connections to St. Bernadette's School, 11th Ave. Head Start, and Two Creeks Park. It will also intersect with connections to Molholm Elementary, Molholm Park, light rail stations, and places to cross the light rail line. The alignment follows the Dry Gulch channel from the connection point at Denver's Lakewood/Dry Gulch Trail west to 11th Ave. west of Lamar St. From there, the trail primarily continues west within the rights of way of 11th Ave. and 10th Ave. where it connects with the proposed trail at Wadsworth Blvd.

Some segments of this trail alignment present challenges. The trail along the channel in this segment will likely require walls and other structures due to the steep slopes. This

alignment also will require that the City of Lakewood acquire property or easements across several parcels of land.



**Rendering of undeveloped property with trail near 10th Ave. and Pierce St.**

### *Trail Connections*

There are many important amenities within this neighborhood that warrant access from the Dry Gulch Alignment. The following trail connections provide opportunities for this access.

#### Molholm Connection

The Molholm Connection would extend from the Dry Gulch Alignment near the Sheridan Blvd. light rail station. It passes through the property currently owned by Xcel. West of Gray St. it follows the 10th Ave. right-of-way west to Harlan St. This trail provides an important connection to Molholm Elementary and Molholm Park.

#### Lamar Street Connection

The Lamar St. Connection would travel north-south, from 10th Ave to 13th Ave. providing a link to the Lamar Street Light Rail Station. It would intersect with the Dry Gulch Alignment where Dry Gulch crosses Lamar St.

This important connection also provides access to the proposed bike lanes on 10th Ave. and the Lamar St. light rail crossing. Lamar Street is one of the few opportunities for north-south pedestrian and bicycle traffic to cross the light rail line running along 13th Ave.

#### Teller Street Connection

The Teller Street Connection would travel north-south from 10th Ave. to 13th Ave. Teller St. is another opportunity for north-south pedestrian and bicycle traffic to cross the light rail line and provides a more direct route to the Wadsworth Blvd. trail overpass at 13th Ave.

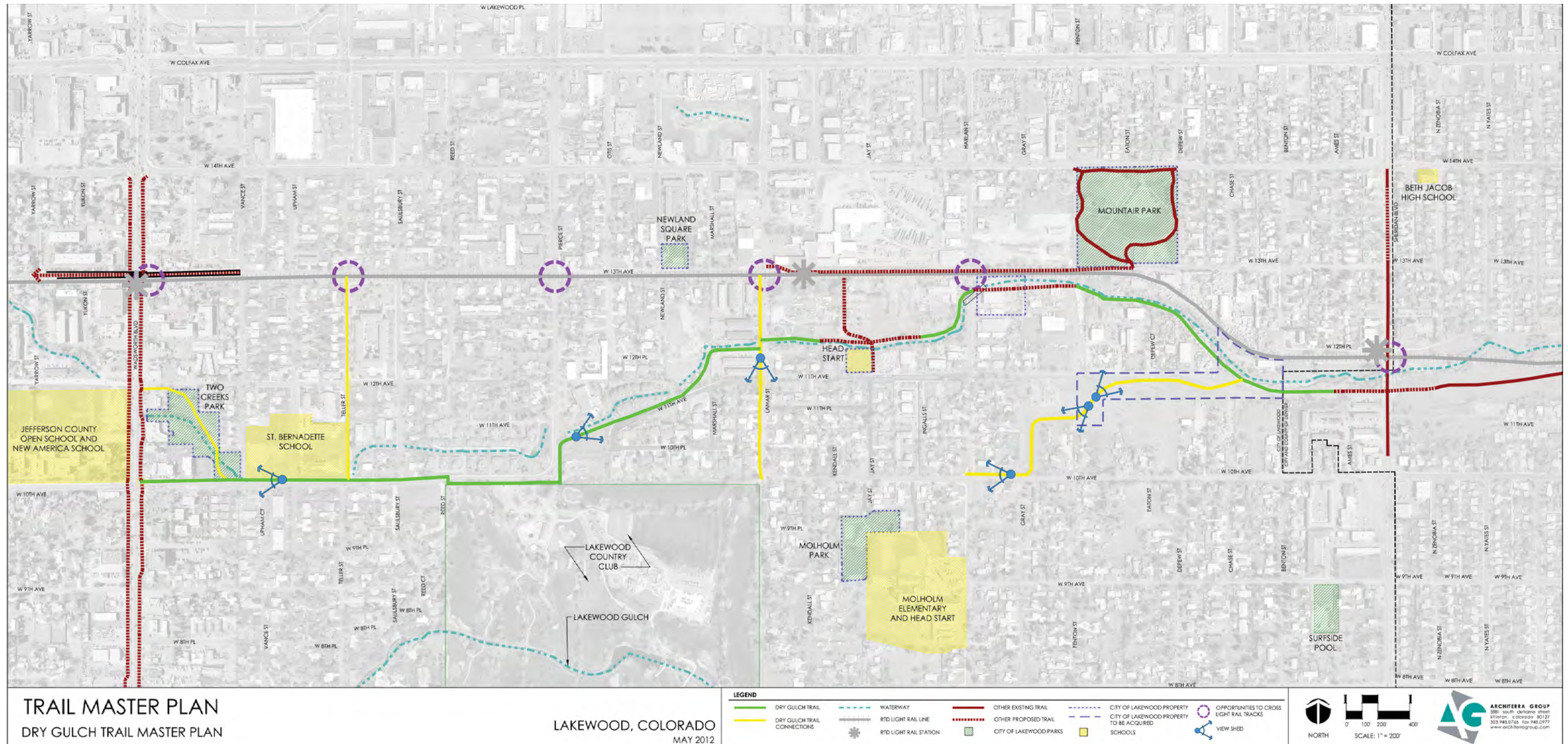




### Two Creeks Park Connection

The Two Creeks Park Connection would travel north from 10th Ave. through the proposed Two Creeks Park to the multi-use trail proposed along Wadsworth Blvd. This connection provides an additional greenway experience along the primary Dry Gulch Alignment and access to the park.

These trail connections provides opportunities for trail users to access other trails and sidewalks that lead to the Jefferson County Open School, Mountair Park, and Newland Square Park.





# IMPLEMENTATION



## Trail Design Issues

### Trails Along Rights-of-Way

Where the proposed trail alignment follows along the right-of-way of a public street, the trail should be separated from the roadway by at least 8' of tree lawn, although 10' is preferred. The standard 50' right-of-way allows for (2) 11' travel lanes, a 4' bicycle lane on each side of the street, a 10' tree lawn and a 10' multi-use trail.

However, the existing location of the streets within the 50' right-of-way varies throughout the study area. A property survey is needed to determine the exact location of the City of Lakewood's right-of-way and the position of the street within that right-of-way.

It is likely that some areas will require realigning the road to accommodate a 10' wide trail separated from the road within the right-of-way. At these locations, the City will have several options: realign the road to accommodate the trail, reduce the width of the trail and/or the tree lawn, or acquire additional property adjacent to the right-of-way, to name a few. The city should make a determination of the best course of action on a case by case basis.

### Trail Development along Dry Gulch

Significant portions of the proposed trail are located along Dry Gulch. As stated earlier, several portions of the Dry Gulch alignment would require constructing trails on areas with steep slopes. These segments of trail will likely require retaining walls, railings, or other structures. Design of a trail along the gulch will require consideration of any floodplain or wetland impacts. An effort should be made to preserve and enhance the natural resources along the Dry Gulch corridor as they are a unique and important amenity in the neighborhood.



**East Plum Creek Trail  
Castle Rock, Colorado**

### Street Crossings

Where trails cross roadways, it is critical to provide safety improvements to maximize the safety of trail users. Improvements could include: underpasses, crosswalks, warning signage for both trail users and motorists, and traffic-calming devices such as: raised pedestrian platforms, pedestrian refuge median islands, and roadway width neck-downs, among other things. Curb ramps should be provided that are at least as wide as the trail and that meet the intent of the Americans with Disabilities Act design guidelines. Safety improvements should be designed on a case by case basis during implementation to determine the most appropriate features.



### Property Issues

Some of the proposed alignments are located on private properties. The City of Lakewood should evaluate property acquisitions that may be required and proceed with property negotiation on an as-needed basis.

## Trail Design Guidelines

### Hard Surface Trails

Concrete is the preferred material for hard surface trails and should typically be four to six inches thick, depending on the need for heavy maintenance vehicles. Concrete trails should be eight to ten feet wide depending on the amount of intended use. Sawcut or zipstrip joints should be used every eight to ten feet to create a smooth surface for wheeled users. Expansion joints should only be used adjacent to existing structures such as walls, steps, etc. Shoulders two to three feet wide with maximum 6:1 slope (2% preferred) are recommended on each side of the trail.

### Signage

Trail signs should be limited to only those necessary for regulatory or informational purposes. Regulatory signs include stop, yield, sharp turns, low clearance, steep grades, and other warning signs. These should be located at appropriate places along a trail for user safety. Directional signs could guide users to the light rail stations, parks, schools, or other important areas.

### Trail Construction

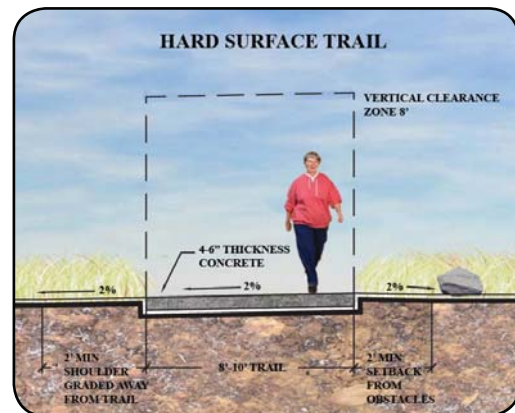
All proposed trails should be constructed with a minimum of disturbance to the existing landscape. Existing vegetation should be protected from disturbance as much as possible. Erosion control measures should be implemented to minimize runoff and protect water quality. Trails should be constructed by qualified contractors.

### Trail Grades

All trails should have a 2% cross slope to create positive drainage across the trail. Longitudinal slopes of 5% or less are ideal. Longitudinal slopes should not exceed 8.33% unless there are no practical alternatives to the steep grade. All trail grades shall conform to the intent of the Americans with Disabilities Act (ADA) wherever possible.

### Vertical Clearance

Minimum vertical clearance from obstructions such as overhead branches should be eight feet (ten feet preferred).



### Curb Ramps

When trails enter a roadway, a curb ramp must be provided that is at least as wide as the trail and that meets the intent of the ADA guidelines.

### Pedestrian Bridges

Bridges over Dry Gulch or any other waterways should be twelve feet wide and designed



to allow maintenance and emergency vehicles to pass over. Bridges should be constructed of cor-ten weathering steel to blend into the natural areas. Bridge railings should be 42" high. The bridge deck should be constructed of concrete for user safety and durability. Wood is slippery when wet and requires additional maintenance.

### Miscellaneous Structures

Structures such as signs, railings, walls, and benches should be located a minimum of two feet from the edge of any trail.

### *Other Trail and Design Standards*

All trail construction shall adhere to City of Lakewood standards, American Association of State Highway and Transportation Officials (AASHTO) standards, and American with Disabilities Act (ADA) standards.

### Documents

- Lakewood Transportation Engineering Design Standards - "The Green Book"
- Lakewood Engineering Regulations, Construction Specification and Design Standards – "The Pink Book"
- AASHTO Guide for the Development of Bicycle Facilities
- AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities
- ADA Standards for Accessible Design
- MUTCD

# APPENDIX





**Dry Gulch Trail Master Plan**  
**Public Meeting #1**

Tuesday, April 5, 2011  
Molholm Elementary School  
6000 West 9<sup>th</sup> Avenue  
Lakewood, Colorado 80214

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John Paliga presented an introduction of the project to date. Lesanne Weller presented the Existing Conditions Plan and Mark Taylor presented the Trail Opportunities Plan.

The following are comments that were received during this public meeting:

- Consider placing the trail to the east of St. Bernadette's, traveling north on Teller because 10<sup>th</sup> Avenue traffic keeps increasing and may not be the best or safest location for a trail.
- The Teller connection could extend to Wadsworth so that there is an easier connection to the Wadsworth overpass from the east.
- Consider keeping both options alive throughout this process. It would be nice to see a loop for residents to walk.
- Please consider the wildlife when proposing the trail alignment.
- Remember to consider road bikes and commuters when doing bicycle facility planning.
- Trails are good for real estate values because real estate agents use a "walk score" to rate non-motorized accessibility.
- Off-street trail improvements are important because the neighborhood traffic will increase once the light rail stations open.
- City needs to improve the maintenance on the trail north of the Country Club, particularly snow removal.

John noted that the next steps will be to revise the plans incorporating some of the comments received at this evening's meeting. There will be a second and final public meeting, and then the design team will complete the master plan.

**Dry Gulch Trail Master Plan**  
**Public Meeting #2**

Tuesday, June 28, 2011  
Mountair Christian Church  
1390 Benton Street  
Lakewood, Colorado 80214

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John Paliga presented a brief introduction and recap of the project to date, including the general comments received at the first public meeting. Mark Taylor presented the Existing Conditions Plan and the Trail Opportunities Plan (both were presented at the first public meeting) and he also presented the Recreation Trail Priority Plan which reflected some changes based on comments received at the first public meeting.

The following are comments that were received during this public meeting:

- Teller may be too narrow to accommodate a trail
- When planning trails, please consider that there has been an increase in the amount of traffic traveling along Teller and an increase in the amount of traffic along 12<sup>th</sup>, prior to the light rail stations opening.
- The City confirmed that the D10 route will be restored at 13<sup>th</sup> from Sheridan to Kipling
- The Wadsworth overpass starts just west of the Granville Assisted Living Center
- There is a ditch on both sides of 10<sup>th</sup> which could be accommodated through engineering methods when the trail is designed.
- When Molholm Elementary lets out, the walk/trail along 10<sup>th</sup> becomes very crowded with school children.
- The intersection of Lamar and 10<sup>th</sup> is very dangerous because of the high speed cars are traveling as they round the curve. The City should consider a three-way stop at that intersection if placing a trail through there.
- Consider a soft surface trail for horses or runners.
- The speed limit for bicyclists is 15 mph and there are patrols out that will hand out tickets for cyclists traveling too fast.
- Residents want to feel that the pedestrian is safe and has a stress-free route.
- It is not a priority to create equestrian routes through the neighborhood as there isn't a lot of current equestrian use and there are equestrian facilities at the Groundhill and Belmar Parks (unverified)
- It was noted that it might be a more pleasant trail experience just north of the golf course if the fences on the north side of the golf course were removed. That would be up to the individual homeowners to decide, but it is an option they can choose.
- It was noted that it would be difficult to plow the snow along the trail just north of the golf course. That trail may not be wide enough to plow, but if it is, public works would probably be the department that maintains that.
- It was noted that the existing trail along the north side of the golf course is a pleasant experience (the dirt, the grass, and the existing tree). It might be more pleasant than a

pleasant than a trail that is enclosed with chain link fences on both sides, however the narrow width of the trail prevents it from being a part of the recreational trail system.

- There has been a lot of flooding along 10<sup>th</sup>. This will be considered and properly engineered when the trail is designed.
- The homeowner at 5701 W. 10<sup>th</sup> claims to own an easement across the Xcel land north of their parcel connecting to 11<sup>th</sup>. The proposed trail alignment crosses their easement.

John noted that the next steps will be to complete the master plan that is shown on the current priority plan. It will then proceed to the planning commission for review and approval.



**Dry Gulch Trail Master Plan**  
**Public Meeting #3**

Tuesday, April 12, 2012; 5:30-7:30 PM  
Molholm Elementary School  
6000 West 9<sup>th</sup> Avenue  
Lakewood, Colorado 80214

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John Paliga presented a brief introduction and reviewed the goals for the project. Mark Taylor reviewed the planning process. He reviewed the Existing Conditions Plan and the Trail Opportunities Plan that were presented at the first public meeting (in April, 2011) and the Draft Recreation Trail Priority Plan and renderings (photo simulations) that were presented at the second public meeting (in June 2011). Then a discussion was held regarding the project.

The following are comments that were received during this public meeting:

- Several people expressed concern about bicycle traffic on 13<sup>th</sup> Ave. as the roadway is already narrow. The design team noted that 13<sup>th</sup> Ave. is part of the regional D10 bicycle route connecting east into Denver. This route varies between separated trail and shared-road and is not being explored as an option for a multi-use trail as part of this master plan because of the narrow shared-road sections.
- One comment noted that the proposed trail on the north side of 13<sup>th</sup> Ave. on the Existing Conditions Plan is not drawn correctly. Our plan shows the trail stopping at Lamar St., but the trail actually continues to Newland Square Park. The design team will review the plan and revise as necessary.
- One attendee stated that she would like to see the trail along 10<sup>th</sup> Ave. at the St. Bernadette School installed as soon as possible.
- One attendee is concerned that installing a trail in the property currently owned by XCEL will lead to vandalism and trespassing on the private properties along that trail.
- It was noted that the trail along Teller would be a great addition to the neighborhood.
- It was noted that the neighborhood still was interested in having loop trail options within the neighborhood.
- One attendee suggested that the asphalt pavement be widened along 10<sup>th</sup> Ave. to improve safety for peds and bikes
- Most of the discussion was regarding the Coppock Trail segment of the Priority One alignment. Comments regarding the Coppock Trail included:
  - Concern that widening the trail would mean additional conflict among users
  - Concern about existing motorized vehicle use on the Coppock Trail; increased pavement width will lead to more motorized use
  - Many commented that they would not support widening the Coppock Trail; it has been there for years and it works fine for its originally intended purpose
  - Installing a multi-use trail along the Coppock Trail easement is a “terrible idea”
  - Concern about muggings and other crimes occurring along the Coppock Trail if it is widened because it will be fenced and does not offer an easy escape

- Want to see trails built in the neighborhood, but don't want to see the Coppock Trail altered
- Concern about lack of maintenance and police patrol of the Coppock Trail
- Concern that if the trail is widened, it will lead to increased number of users and increased speed of users.
- Concern about removing vegetation (trees and shrubs) along the Coppock Trail that was installed by the adjacent homeowners
- Concern about property values lowering as a result of a widened trail
- Concern about current night time use of the trail – some suggested closing the trail at night.
- Concern that we did not listen to their concerns during the first public meetings
- Some do not want the trail alignment to go through the Coppock Trail segment and feel we aren't listening
- One attendee noted that they are tired of the City using the safety of schoolchildren as the rationale for trail projects that the neighborhood does not want
- Concern that Lakewood holds public meetings but does not listen to or value the public's statements at those meetings
- One attendee noted that motorized access can be controlled by installing gates or bollards at the entry;

The following are comments that were written on comment cards at this public meeting:

- "Will there be 'sharrow' signage on 13<sup>th</sup> Ave. where cars & bikes share?"
- "The main concerns of the Lakewood Country Club would be the safety of those using the trail. If you can raise the fence up to 8 or 9 feet and make it look good and sturdy that would help, not eliminate, the safety problem. If the additional traffic would create a lot of noise that would be a negative for the golfers."
- "Neighborhood Participation Program: Improvements for Newland Square Park, park equipment bad shape"
- "Same old same old, we are NOT being heard, the plan is already done! Why did U bother to have this mtg?"
- "I believe it's a win to provide trails for non-motorized vehicle entities such as pedestrians and pedal bikes. How do we engender a spirit of courteous 'share the trail' between exercising/walking pedestrians, runners, dog walkers with extendable leashes, parents with strollers, kids walking to school, recreating bicyclists, commuting bicyclists, and wheelchairs, etc.?"
- "I don't feel this is right, what about trash clean-up, enforcement of 'no motorized vehicles'? You seem to be locked in on shoving something down our throats that we don't want."
- "I oppose any additional concrete in the Coppock trail. I also oppose any expansion of the current easement. I am not negotiable on that issue."
- "This proposed trail goes directly behind my property and is fine as a walking path + a few bicycles but widening the trail and increasing the traffic and possibly the

motorized traffic as well is a horrible idea and will result in decreased property values.”

- “Terrible plan – right now walkers/bicyclists/dogs go slow. An 8’ trail would have people zooming by. There’s already mini bikes + motor scooters going down there + no one to stop them. There will be more illegal activity, trash left there, etc. Route it somewhere else.”
- “It seems making an easy path from east to west would be an improvement but not what I would really like to see. As a family recreational trail I would like it to be more off-street + beautiful – basically following the gulch. Also the Coppock trail – I would like to see it as a pedestrian trail only and us bikers to have another option.”

attachment: meeting sign-in sheet



# Dry Gulch Trail Masterplan - Public Open House #3

Please sign in

Name (Please print)	Mailing Address (include city and zip code)	E-mail Address	Phone Number
John Gabyer	6595 West 14th Ave #202	JRG222@comcast.net	303/235-1881
Axel & Myrlyne Sjogren	6305 W. 16th Ave UNIT C-17 80214	A.SJOGREN@COMCAST.NET	3/274-5395
T.J. & Jan Mullen	7390 W. 12th Ave 80214		7/488-4263
Sakari Kullman	6650 West 10th Place 80214	BLORULLIANK@AOL.COM	3/232-9278
K.J. Mathis	6650 W 10th Place 80214	NA	NA
T.D. Hatch	5701 W. 10th Ave Lakewood 80214		3274-9349
Sharon Vincent	1311 Saultsbury		3/232-6550
Pill Spriggs	1201 Balsam St.		3/349-1673
Mary Page	960 Ingalls St. Lakewood 80214	marykpage@comcast.net	3-232-7529
Carol Stansbury	1294 Reed St. Lakewood 80214	carolstansbury@msn.net	410-330-1115
John Weiland	7411 W 12th Ave 80214	john@jwp99.com	9510 9101
Tommy Hasford	5786 W 8th Ave 80214	e.hasford@comcast.net	3/237-7946
Randy & Madeline Nichols	5800 W. 8th Ave Lakewood	rahell@juno.com	303/237-0054
RAMEY JOHNSON	675 ESTES ST LW		3-232-1567
Jim Hickey	701 HARLAN ST. 15-19 80214	hickey4922@msn.com	
Kendra Paiement	6395 W. 11th PL	yaya.paiement@yahoo.com	720-425 0025
Sara Farrao-Nagy	1290 Vance St 80214	sara@farrao-nagy.com	3/523-0023
Bill Dalbout	6560 W. 10th Place		3-238-7231
Bill & Linda Vigor	2459 S. Chasco Ln		3-9888-9027

April 12, 2012  
5:30 to 7:30 pm

Please sign in

April 12, 2012  
5:30 to 7:30 pm

**ARCHITERRA GROUP**

5881 south deframe st.  
littleton, colorado 80127  
303.948.0766 fax.948.0977  
www.architerragroup.com

**Dry Gulch Trail Master Plan**  
**City of Lakewood**  
**Preliminary Estimate of Probable Construction Costs**  
**May 14, 2012**

Dry Gulch Trail Alignment				
ITEM	UNIT	QTY	UNIT COST	TOTAL COST
10' concrete trail within ROW	LF	4,000	\$210.00	\$840,000.00
10' concrete trail along Dry Gulch with steep slopes	LF	2,865	\$435.00	\$1,246,275.00
10' concrete trail requiring minimal grading	LF	340	\$65.00	\$22,100.00
Subtotal East-West Trail Alignment				\$2,108,375.00
Design and Engineering (15%)				\$316,256.25
Contingency (15%)				\$316,256.25
<b>Total East-West Trail Alignment</b>				<b>\$2,740,887.50</b>



Trail Connections				
ITEM	UNIT	QTY	UNIT COST	TOTAL COST
<b>Molholm Connection</b>				
10' concrete trail requiring minimal grading	LF	1,800	\$65.00	\$117,000.00
10' concrete trail within ROW	LF	490	\$210.00	\$102,900.00
<b>Molholm Connection Total</b>				<b>\$219,900.00</b>
<b>Lamar Street Connection</b>				
10' concrete trail within ROW	LF	1,300	\$210.00	\$273,000.00
<b>Lamar Street Connection Total</b>				<b>\$273,000.00</b>
<b>Teller Street Connection</b>				
10' concrete trail within ROW	LF	1,300	\$210.00	\$273,000.00
<b>Teller Street Connection Total</b>				<b>\$273,000.00</b>
<b>Two Creeks Connection</b>				
10' concrete trail requiring minimal grading	LF	900	\$65.00	\$58,500.00
Box culvert crossing	LS	1	\$25,000.00	\$25,000.00
<b>Two Creeks Connection Total</b>				<b>\$83,500.00</b>
<b>Subtotal Trail Connection</b>				<b>\$849,400.00</b>
Design and Engineering (15%)				\$127,410.00
Contingency (15%)				\$127,410.00
<b>Total Trail Connections</b>				<b>\$1,104,220.00</b>

<b>Total Dry Gulch Alignment and Trail Connections</b>	<b>\$3,845,107.50</b>
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Exclusions:

- ~ Property acquisition and/or roadway improvements
- ~ Tap fees

Prices are based upon preliminary alignments shown in the Dry Gulch Trail Master Plan, dated May 2012

See Unit Price Worksheet for more information about unit prices

Assumes all street crossing are at-grade crossings

## Unit Price Worksheet

10' concrete trail requiring minimal grading				\$65.00 /LF
<b>10' concrete trail within ROW - costs per 100 LF</b>				
curb and gutter	LF	100	\$30.00	\$3,000.00
asphalt patch	SY	23.5	\$100.00	\$2,350.00
drainage (assume 1 inlet every 300 lf: \$1,000, 100 LF pipe:\$3,750)				
	LS	1	\$4,750.00	\$4,750.00
misc. structures (signs, curb ramps, etc.)	LS	1	\$1,000.00	\$1,000.00
soil prep, sod, mulch	SF	1000	\$1.25	\$1,250.00
trees	EA	3	\$300.00	\$900.00
pop up spray irrigation	SF	1000	\$1.25	\$1,250.00
<b>10' concrete trail within ROW</b>			<b>\$145.00 /LF</b>	<b>\$145.00 /LF</b>
			+	<b>\$65.00 /LF</b>
				<b>\$210.00 /LF</b>

10' concrete trail along Dry Gulch with steep slopes- costs per 100 LF			
4' retaining wall	CY	25	\$750.00 \$18,750.00
railing	LF	100	\$150.00 \$15,000.00
rumble strip	SF	300	\$7.00 \$2,100.00
wetland restoration	SF	150	\$1.00 \$150.00
earthwork	LS	1	\$1,000.00 \$1,000.00
10' concrete trail along Dry Gulch with steep slopes			\$37,000.00 =
			+ \$370.00 /LF
			\$65.00 /LF
			\$435.00 /LF