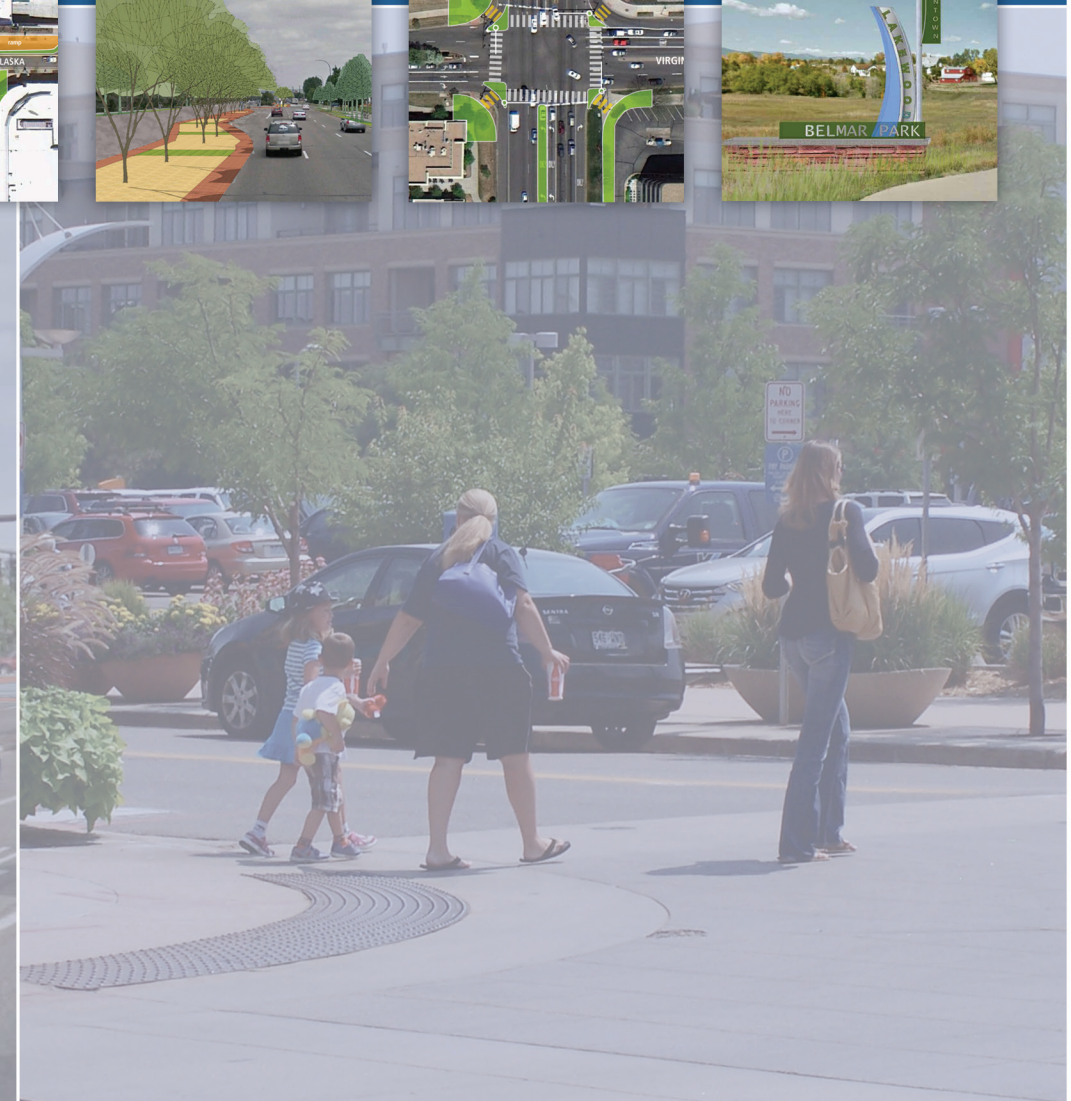
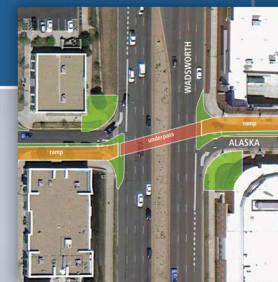


Downtown Lakewood Connectivity & Urban Design Plan

Adopted January 2014



Presented by



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Executive Summary

Downtown Lakewood has changed significantly over the past twenty-five years. What was once the Villa Italia shopping mall, and the vacant land west of Wadsworth Boulevard has redeveloped as the home of Lakewood City Commons, City of Lakewood offices and civic uses, and the mixed-use development of Belmar. Today Downtown is a vibrant and changing area with over 2 million square feet of restaurant, retail and commercial use supported by a growing residential base of nearly 1,600 new units. Bus transit service concentrated along Wadsworth Boulevard and Lakewood City Commons now connects Downtown with the W Line light rail station at 13th Avenue and Wadsworth Boulevard. Previous City planning efforts have created a framework for change in Downtown including, the New Wadsworth Boulevard Corridor Plan of 2009, the Lakewood City Center Placemaking Signage Guidelines of 2010 and the new Lakewood Zoning Ordinance of 2013. The intensification of uses and changing Downtown environment has resulted in an increased demand for pedestrian and multi-modal connectivity throughout the area and a more recognizable Downtown identity.

The City of Lakewood embarked on the Downtown Connectivity and Urban Design Study in July 2012 with the intent of enhancing a rapidly growing Downtown with increased and safer pedestrian and bicycle connectivity; stronger transit connections to the light rail stations and enhanced transit stops; and improved wayfinding elements, downtown identification signage, private signage recommendations and urban design elements. All of these elements are intended to unify Downtown and strengthen its identity. Over the past year, the project team and city staff have worked with Downtown stakeholders and conducted public workshops to gather input on possible solutions.

These groups have assessed numerous options and have developed recommendations that support increased connectivity, transportation alternatives and a stronger and more visible Downtown identity.

Study Area



Downtown Lakewood is located at the junction of Alameda Avenue and Wadsworth Boulevard and includes the area from Kentucky Avenue to West Byers Place just north of Alameda Avenue, and from Carr Street east to Pierce Street.

Connectivity and Streetscape Strategies

Pedestrians, bicycles, buses and vehicles must operate throughout Downtown and in a balanced manner that promotes overall mobility and ensures pedestrian connectivity throughout the area. Prioritizing the pedestrian and maximizing pedestrian connectivity is achieved through changes in roadway design and intersection operation, but also through the development of a streetscape that is comfortable for pedestrians and is visible to the driver. The connectivity and streetscape strategies for Downtown Lakewood address the two major arterials that bisect Downtown; Wadsworth Boulevard and Alameda Avenue.

Ohio Avenue and Wadsworth Boulevard is the transition point between the rural character of the Belmar Park zone to the mixed-use, higher density zone continuing north. On-street bicycle facilities along Ohio Avenue link residential uses, Belmar Park and Downtown retail uses. Virginia Avenue acts as the key pedestrian link between uses east and west of Wadsworth Boulevard and improvements include the potential removal of a northbound left turn lane from Wadsworth Boulevard to Virginia Avenue and the construction of channelizing islands to narrow the pedestrian crossing distances and increase pedestrian visibility. Improvements at Alaska Drive include the possible opening up of a northbound left turn lane from Wadsworth Boulevard to Alaska Drive,

increased land use density within Lakewood City Commons and the eventual implementation of an at-grade pedestrian crossing of Wadsworth Boulevard at Alaska Drive. (CDOT approval would be needed for any pedestrian crossing).

Enhancements to the Wadsworth Boulevard corridor, create visual continuity for the east and west sides of the roadway. Design elements extend to the gateway monument at Kentucky Avenue and establish a sense of entry into Downtown from the south. Corridor design improvements, coupled with signage, extend the length of Wadsworth Boulevard and include the following:

- Expanded medians and consistent median design
- Consistent tree lawn
- Low sandstone walls and pedestrian lighting additions to the west side of Wadsworth Boulevard

Design enhancements support key intersection improvements at Ohio Avenue, Virginia Avenue, Alaska Drive and Alameda Avenue. Pedestrian and bike improvements at all these locations include clearly delineated colored crosswalks in all directions, pedestrian scale lighting, benches and site furnishings.

Enhancements to the Alameda Avenue corridor create visual interest and convey a stronger Downtown identity within the large median between Allison Parkway and Pierce Street. Gate-



Connectivity improvements and urban design elements combine to unify Downtown and strengthen its identity.

way markers and design treatments included in the medians signify the approach to Downtown from east and west along Alameda Avenue. Key improvements include:

- Expanded median locations and widths and consistent design
- Consistent tree lawn
- Addition of pedestrian lighting to both sides of Alameda Avenue

Opening up a new left turning movement into Lakewood City Commons at Yarrow Street will alleviate congestion at Allison Parkway and the King Soopers. A 20' wide pedestrian crossing on the east side of the intersection of Teller Street

and Alameda Avenue highlights this important link between the neighborhoods north of Alameda Avenue and Belmar. Future sidewalk improvements to the north side of Alameda Avenue and the installation of sidewalks as development and redevelopment continue to occur on the north side of Alameda Avenue will continue to improve connectivity to the neighborhoods north of Downtown.

Executive Summary

Urban Design and Signage

Urban design features are elements in the public realm that define an area's sense of place and character. In areas such as Downtown Lakewood, where a consistent architectural style is currently lacking, urban design elements act as the primary place-making component, bringing continuity and clear identity. The Downtown Lakewood palette consists of linear and uniform elements such as contemporary lighting, median plantings and low walls to create linear urban edges to the streets, and vertical elements such as identity markers to compete with the wide roadways and large architectural facades. The term Downtown Lakewood should be used as signature branding on signage throughout the area, complemented by lighting and furnishings that reflect a contemporary styling with some traditional materials. The signature package of signage for Downtown Lakewood reflects that branding and styling and is visible at different scales. Gateway monument signs are recommended at Virginia Avenue and Alameda Avenue, supported by identity markers at Kentucky Avenue, Ohio Avenue, Allison Parkway and Teller Street.



Wayfinding in Downtown

A wayfinding system plays a key role in establishing area identity; assisting visitors and residents in navigating the area; and supporting a stronger pedestrian environment. The wayfinding system for Downtown Lakewood is comprised of three tiers of signage; information kiosk, pedestrian totem and directional "finger" signs. Pedestrian totems are located at the edges of Downtown, along Pierce Street to the east, Belmar Park to the west and Alameda Avenue to the north to inform pedestrians of entry points into Downtown and to direct them to nearby uses. Once inside the Downtown, whether on foot or in a vehicle, information kiosks are located at primary destinations such as Transit Centers, the Heritage Center and Belmar Library to provide a broad range of information and mapping. Finger signs or posts are located throughout the area ensuring consistent directional information and supporting the visible identity of Downtown.

Alternate Modes

Multi-modal connectivity options to and within Downtown Lakewood are fundamental to increasing resident and visitor activity, creating a vibrant Downtown and reducing reliance on the private automobile. Bus transit service and the new private Belmar shuttle currently provide links between Downtown and the 13th and Wadsworth light rail station. While additional Downtown bus circulators are not recommended in the short term, improvements to the Downtown and Belmar Transit Centers are. Making both these Transit Centers more visible and accessible and more clearly linked to Downtown activities is important, and should be accomplished through facility improvements and the implementation of highly visible identity and wayfinding signage at these locations - making them a stronger element of Downtown environment.

Transit services are supplemented by an expanded bicycle system consisting of additional on-street facilities where space permits, or shared lane or "sharrows" where there is not enough width to implement a bicycle lane. The addition of bike facilities on Yarrow Street and Allison Parkway in the Lakewood City Commons area links land uses and the Downtown Transit Center. In the Belmar area, the addition of on-street facilities along Vance Street, Kentucky Avenue, Reed Court and Center Avenue will connect residential and retail uses and utilize the proposed

enhanced bicycle crossing of Wadsworth Boulevard at Ohio Street to connect to Belmar Park. The addition of on-street facilities to Teller Street will connect neighborhoods north of Alameda Avenue to Belmar and other area uses.

The improved bicycle network is supported by recommendations to explore bicycle sharing systems, with a starter system of 1 to 4 kiosks at locations such as the Downtown and Belmar Transit Centers, the Heritage Center and Colorado Christian University. Bike share could link transit riders with Downtown destinations via the on-street bike lanes along Garrison Street from the Garrison light rail station or Routt Street bike lanes and the off-street facility running the length of Alameda Avenue from the Federal Center station. A bike share system that could function seamlessly with the Denver and Golden systems should be explored.

Car share programs in the Downtown area also offer an opportunity to extend mobility options even further. The implementation of a car sharing program in Downtown and at nearby light rail stations would strongly support the "last mile" connection from the light rail stations to Downtown, allowing residents and visitors to better utilize the light rail system and access various Downtown area destinations. Support for these programs increases as development densities and the mix of uses Downtown grow, and Downtown identity and visibility strengthens.

Conclusion

The combination of elements found in the Downtown Lakewood Connectivity and Urban Design Plan are designed to support a changing and growing Downtown environment, increase pedestrian connectivity and enable stronger multi-modal access to and around Downtown. Connectivity improvements are coupled with urban design enhancements and signage palette to support a more recognizable and visible Downtown.

The recommendations of this Plan will help Downtown Lakewood continue to grow and thrive.

Introduction

The area that is now referred to as Downtown Lakewood has changed significantly over the past twenty-five years. What was once the Villa Italia shopping mall, and vacant land west of Wadsworth Boulevard has redeveloped as the home of Lakewood City Commons, City of Lakewood offices and civic uses and the mixed-use development of Belmar. Numerous planning efforts including the adoption of the City's new Zoning Ordinance in 2013, have come together to make Downtown Lakewood a growing and vibrant location. Restaurant, retail and commercial uses continue to grow throughout the Downtown supported by surrounding, older residential neighborhoods and nearly 1,600 new residential units in Belmar. Additionally, Lakewood City Commons retail combined with Belmar's projected 1.7 million square feet of commercial development make for a significant shopping and entertainment district in the Downtown area. Transit service has been strengthened to include increased bus service to Downtown and the addition of light rail service to Lakewood at Wadsworth Boulevard and 13th Avenue.

Along with the intensification of land uses and improved transit, has come a growing demand for multi-modal connectivity throughout Downtown, a stronger pedestrian environment and a more recognizable Downtown identity.

Previous planning efforts in Downtown Lakewood have paved the way for this study and have created a framework for today's changing land use pattern and redevelopment opportunities, urban place-making and improved monument signage, directional wayfinding and identity in Downtown.

Lakewood Center Plan, 1990

Lakewood City Commons, 2000

Alameda Cornerstone Plan, 2002

Villa Italia Redevelopment/Belmar, 2004

North Wadsworth Boulevard Corridor Plan, 2009

Lakewood City Center Placemaking Signage Guidelines, 2010

Lakewood Zoning Ordinance, 2013

Study Area



This study examines pedestrian, bicycle and vehicular connectivity throughout the Downtown area and particularly across the barriers of Wadsworth Boulevard and Alameda Avenue. The study suggests key projects to enhance that connectivity, supported by recommended urban design improvements and streetscape enhancements to make active transportation a viable option for visitors and residents. Downtown identification markers, gateway monuments and wayfinding signage are recommended at specific locations throughout the Downtown to create a stronger and more visible Downtown identity and to promote greater pedestrian activity and comfort. All recommendations in this study are supported by implementation details

and high-level cost estimates noted in the implementation tables in each section of the report. The project leads identified are assumed to be the primary lead in implementing the proposed improvements. All recommendations are designed to increase multi-modal mobility, enhance identity and make Downtown Lakewood a more active and economically viable location within the City.

Project Purpose

The Downtown Lakewood Connectivity and Urban Design Plan is intended to enhance this changing Downtown environment through:

- Safe and convenient pedestrian and bicycle connections
- Transit connections to light rail stations
- Improved wayfinding signage for all mode users; and
- Urban design and signage elements that unify the downtown area and strengthen identity

Project Goals

Goal #1 – Create a more pedestrian friendly environment by enhancing pedestrian and bicycle access across the barriers of Wadsworth Boulevard and Alameda Avenue, and to and from adjacent neighborhoods, and reducing the use of personal automobiles.

Goal #2 – Increase the visual identity of Downtown Lakewood and awareness of its cultural, civic and recreational resources, and leverage economic benefit through the development of a strong urban design character and style.

Goal #3 – Balance mobility options in Downtown Lakewood: bicycle, pedestrian, transit and auto and increase multi-modal connections to W Line stations and neighboring destinations.

Goal #4 – Create a unified, informative and effective wayfinding system for Downtown Lakewood.

Project Team

City staff, stakeholders and the general public were essential participants in the planning process. In addition to the consulting team, city staff from Planning, Public Works, Community Resources, and the City Managers Office participated in monthly project team meetings to review and discuss project progress and recommendations.

Stakeholder Committee

A Stakeholder Committee was formed at the onset of the project consisting of active representatives of the Downtown Lakewood community including City of Lakewood elected officials, the Alameda Gateway Association, Belmar, Lakewood City Commons, downtown homeowner associations, RTD, CDOT and Jefferson County Library. The Committee met six times throughout the process and were instrumental in identifying challenges and opportunities in downtown and providing input and guidance on the direction for improved connectivity and urban design strategies.



Web Questionnaire

A web-based questionnaire was distributed and available from October through December 2012. There were 119 respondents that helped to identify needs and issues related to downtown, and highlight the preferences for future design elements. Survey respondents preferred a design that was contemporary with traditional accents, utilizing materials similar those found at Belmar such as brushed aluminum or silver metal and lighting.

One-on-one Meetings

Individual discussions were held with representatives from Belmar and Lakewood City Commons developments, Alameda Gateway Community Association and Colorado Christian University.

Public Workshop #1

October 2, 2012 – Issues, Challenges and Opportunities in Downtown Lakewood



The purpose of this meeting was to gather input on the key challenges to connectivity and identity in downtown and the potential opportunities for improvement. A visual preference survey was completed during this first outreach event to establish preference for downtown identity and design elements. Attendees weighed in on study area features, furnishings, signage, lighting, hardscape and landscape materials.

Public Workshop #2

January 22, 2013 – Transportation Connectivity Infrastructure



Modal interface challenges were identified along Wadsworth Boulevard and Alameda Avenue. Attendees reviewed options for improved pedestrian crossings of both corridors and potential improvements to shared space among pedestrians, bicyclists and vehicles at crossing locations.

Public Workshop #3

April 30, 2013 – Urban Design; Signage, Streetscape and Downtown Identity



Initial concepts for urban design elements, streetscape improvements and signage were shared with the public. Local transit service, bicycle-share and car-share were also discussed.

Public Workshop #4

June 18, 2013 – Connectivity and Urban Design Recommendations

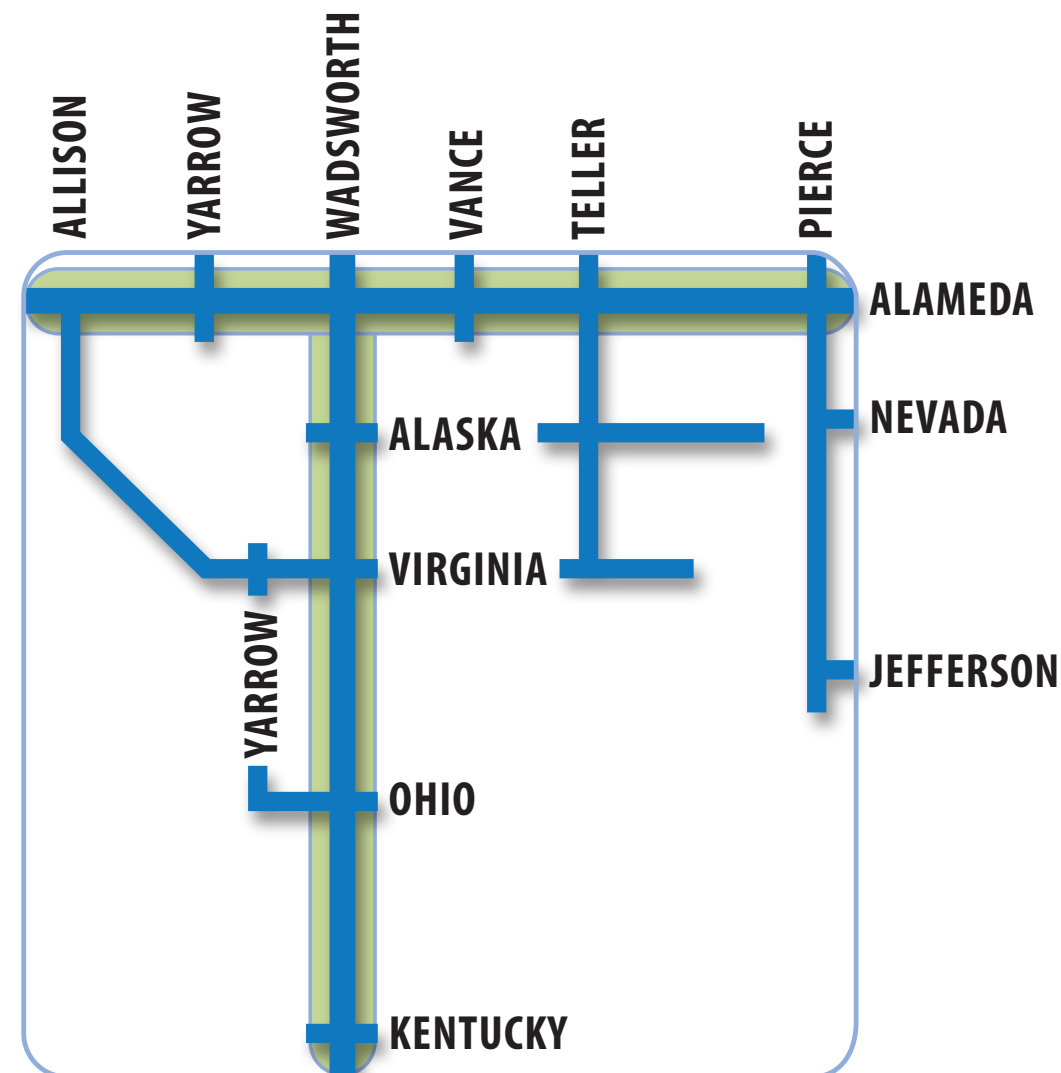


Draft recommendations for improved connectivity throughout Downtown and across Wadsworth Boulevard and Alameda Avenue were integrated with urban design elements for increased visual continuity, identity, monumental and wayfinding signage.

Introduction

Pedestrian connectivity is an essential component of a vibrant and successful downtown. But, as with all downtowns, pedestrians, bicycles, buses and vehicles must operate in the same arena and designers must seek a balance that enhances overall mobility and ensures pedestrian connectivity throughout the area. Prioritizing the pedestrian and maximizing pedestrian connectivity is achieved through changes in roadway design and intersection operation, but also through the development of an enhanced streetscape that is comfortable for pedestrians and is visible to the driver.

This section addresses the two major arterials that bisect Downtown Lakewood; Wadsworth Boulevard and Alameda Avenue. Changes to the streetscape along these corridors, along with design enhancements and modifications to the operation of some of the intersections along these roadways, are detailed in this section and are fundamental to increased pedestrian comfort and activity in Downtown Lakewood.



Engineering recommendations identified in this section are coupled with urban design improvements in each corridor that include the following:

Wadsworth Boulevard Corridor

Enhancements to the corridor focus on creating visual continuity for the east and west sides of the roadway. Design elements extend to the southern gateway at Kentucky Avenue, establishing a sense of entry at the downtown gateway and introducing urban identity and gateway markers consistent with the Downtown theme into Belmar Park. The southern gateway is supported by large monumental signage at the northwest corner of Virginia Avenue and Wadsworth Boulevard and at the southwest corner of Alameda Avenue and Wadsworth Boulevard. Key corridor improvements coupled with signage include:

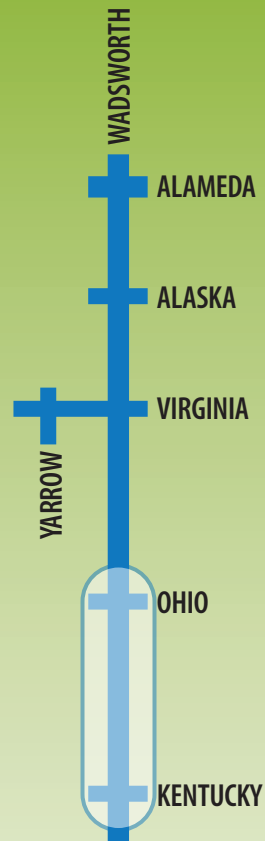
- Expanded median locations – as tied to roadway and circulation improvements
- Consistent median design – colored concrete splashplate, structured plantings, decomposed granite bands
- Consistent tree lawn - Alternating tree and planting beds between sidewalk and back-of-curb
- Addition of low sandstone walls to west side
- Addition of pedestrian lighting to west side
- Enhanced intersections – at Virginia Avenue, Alaska Drive and Alameda Avenue

Alameda Avenue Corridor

Enhancements to the corridor focus on creating visual interest and conveying Downtown identity within the large median between Allison Parkway and Pierce Street. Gateway elements are included in the median of Alameda Ave, east and west of the intersection with Wadsworth Boulevard and at the southwest corner of Alameda Avenue and Wadsworth Boulevard. Key corridor improvements coupled with signage include:

- Expanded median locations and widths – as tied to roadway and circulation improvements
- Consistent median design – colored concrete splashplate, structured plantings, decomposed granite bands, ornamental trees
- Consistent tree lawn - Alternating tree and planting beds between sidewalk and back-of-curb
- Addition of pedestrian lighting to both sides
- Enhanced intersections – at Teller Street and Wadsworth Boulevard

Wadsworth Boulevard Corridor: Kentucky Avenue to Ohio Avenue



Today's Conditions

The intersection of Kentucky Avenue and Wadsworth Boulevard is the southern edge of Downtown Lakewood. This is also the southern boundary of Belmar Park and remains in its natural setting with no identification markers or formal site improvements. The intersection of Kentucky Avenue and Wadsworth Boulevard is not signalized but a below-grade pedestrian tunnel just north of the location links the residential development on the east side of Wadsworth to the park on the west. Sidewalks on the east and west sides of Wadsworth Boulevard provide pedestrian access from the southern edge of Downtown to destinations within Downtown, north of Ohio Avenue. The sidewalk meanders into Belmar Park on the west side of Wadsworth as the pedestrian approaches Ohio Avenue and the entrance to the Heritage Center.



Existing bus stops near Kentucky Avenue



A special path along Wadsworth Boulevard links the transit stop and the sidewalk south of the park

Pedestrian tunnel at Kentucky is the safest way to cross Wadsworth.

Participation

Public meeting attendees noted that the pedestrian underpass near Kentucky Avenue and Wadsworth Boulevard provided great bicycle access to Belmar Park and the Heritage Center. However, improved lighting is needed at the entry points to the underpass.

Better directional signage is also recommended to inform residents and visitors that the underpass is there.

Implementation

Kentucky Avenue to Ohio Avenue

Planning Level Capital Cost Estimate:	\$44,000 (Downtown Identity Markers) \$20,000 (underpass lighting)
Timeframe:	Near
Complexity:	Medium (Downtown Identity Markers) Low (underpass lighting)
Potential Project Lead:	City

Notes and Phasing Opportunities: The cost includes two Downtown Identity Markers, one at the south edge of Belmar Park and one at Ohio Avenue, and the addition of lighting to the approaches of the underpass of Wadsworth Boulevard located south of Ohio Avenue. All elements can be implemented independently. Final signage installation locations to be determined based on coordination with property owners, Community Resources, and Lakewood Public Works.

Recommendations

Kentucky Avenue presents a unique opportunity to signify the approach to Downtown through Gateway signage that identifies Belmar Park as a component of Downtown and a visible community resource. The image below illustrates the potential Gateway feature at Kentucky Avenue and ties Downtown sign characteristics and materials to transit stop improvements just north of Kentucky Avenue. Land uses along this stretch of Wadsworth Boulevard are minimal and pedestrian activity is low, making design elements critical visual cues to the driver that as they travel north up the hill to Ohio, they are entering Downtown. Sidewalk should be added along the west side of Wadsworth Boulevard for 500' south of Ohio Avenue to connect the bus stop directly to the sidewalk to the south that is adjacent to Wadsworth Boulevard. The evident social trail in this section indicates that pedestrians want to stay adjacent to Wadsworth Boulevard and not meander to the west on the existing sidewalk/trail. The installation of a median in Wadsworth Boulevard from Kentucky to Ohio should be considered over the long-term, visually informing the driver that they are in the Downtown area.



Potential Gateway feature at Kentucky Avenue



Potential Bus Shelter at Kentucky Avenue

Wadsworth near the Heritage Center



Today's Conditions

The intersection of Ohio Avenue and Wadsworth Boulevard marks the arrival into the core of Downtown Lakewood. This location consists of the retail and commercial uses that are prevalent in Downtown with the recreational uses of Belmar Park and the residential base east of Wadsworth Boulevard. Pedestrians and bicyclists utilize Ohio Avenue to access Belmar Park and other uses along Wadsworth Boulevard and yet crosswalks at this intersection are barely visible and there are no formal improvements at any of the four corners of the intersection that indicate it is an integral crossing within Downtown Lakewood. The transit stop at Ohio Avenue and Wadsworth Boulevard lacks any downtown identification or improvements.



Existing bus stop near Ohio Avenue



Park entrance at Ohio Avenue

Participation

There is poor lighting and visibility for the pedestrian crossing at this intersection. Better lighting and signage would make this crossing at the top of the hill more comfortable.

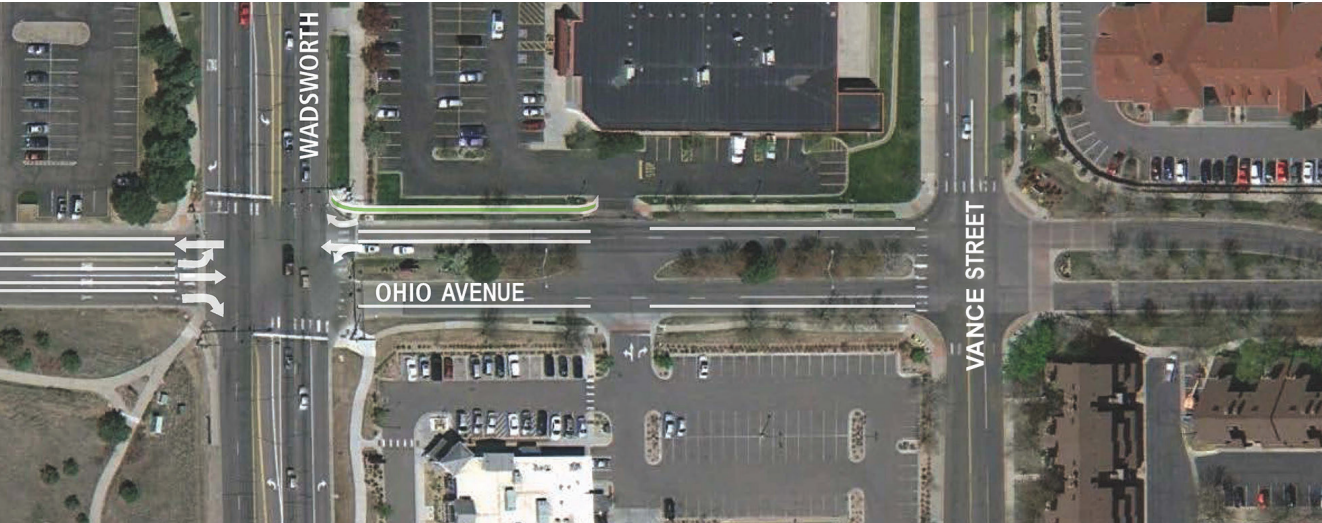
Concerts and community events at the Heritage Center draw bicyclists and pedestrians across Wadsworth Boulevard at Ohio, particularly during the afternoon and evening hours.



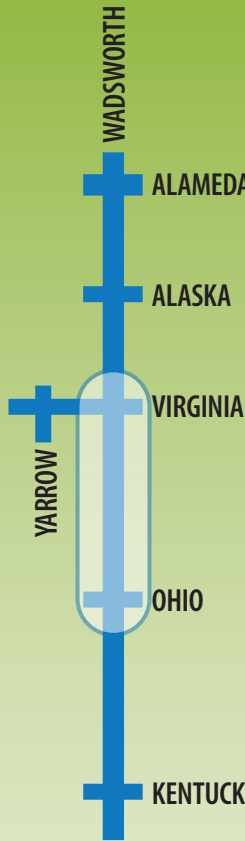
Ohio Avenue streetscape east of Wadsworth

Recommendations

The figure below illustrates the restriping of Ohio Avenue at Wadsworth Boulevard. The west leg of the intersection includes a westbound bicycle lane, a westbound through lane, an eastbound left turn lane, an eastbound through lane, an eastbound bicycle lane, and an eastbound right turn lane allowing improved bicycle connectivity across the intersection. The east leg of the intersection should be modified to include one eastbound through lane, one eastbound bicycle lane and one westbound right turn lane, one westbound bicycle lane, and one westbound combined through/left turn lane. In order to achieve the westbound bicycle lane on the east side of Wadsworth Boulevard, the north curb line must be moved 4' further north to allow for the necessary space for all required lanes. The City of Lakewood is working with CDOT to restripe the northbound right turn lane as a through lane.



Vance Street is proposed to include an on-street bicycle facility connecting residential uses with Belmar. Improvements to the segment of Ohio Avenue between Vance Street and Wadsworth Boulevard enable stronger connectivity between residential uses, Belmar Park, and surrounding Downtown retail uses. The intersection of Ohio Avenue and Wadsworth Boulevard should be improved with more visible colored pedestrian crosswalks at all four crossing locations. These intersection improvements should be coupled with the installation of more visible Downtown identification signage just south of Ohio Avenue and an improved streetscape including evenly spaced columnar trees along Wadsworth Boulevard that create a stronger vertical edge to the street. Thinning of the trees and landscape in the median along Ohio Avenue between Vance Street and Wadsworth Boulevard will improve sight distance in this stretch. These design improvements near Ohio Avenue and Wadsworth Boulevard enable better bicycle and pedestrian mobility and create an identity for Downtown at this important location.



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Wadsworth Boulevard Corridor: *Ohio Avenue to Virginia Avenue*

Urban Design Recommendations

The intersection of Ohio Avenue and Wadsworth Boulevard serves as a transition point between the more park-like and rural character of the Belmar Park zone to the south, and the mixed use corridor continuing north. Due to the lowered topography when approaching the intersection, the impact and visibility of design features is critical to establishing this intersection as the beginning of the Wadsworth urban corridor. Pedestrian improvements include clearly delineated colored crosswalks in all directions to facilitate safe pedestrian movements and the introduction of pedestrian scale lighting, benches and site furnishing amenities. An updated Heritage Center entry sign at the southwest corner provides a vertical landmark for pedestrians and motorists (see page 6), tying this intersection to Kentucky to the south. Colored, lighted bollards could be introduced adjacent to the intersection, serving as markers for the more urban character that occurs as one continues north. Continuous street trees and lighting also begin at this intersection and continue north.



Northbound on Wadsworth Boulevard at Ohio Avenue



Northbound on Wadsworth Boulevard north of Ohio Avenue

Implementation

Ohio Avenue to Virginia Avenue

Planning Level Capital Cost Estimate:	\$950,000
Timeframe:	Medium (intersection improvements) Long (median improvements)
Complexity:	Medium
Potential Project Lead:	City

Notes and Phasing Opportunities: Implementation of the Ohio Avenue and Wadsworth Boulevard intersection improvements should follow the implementation of bike lanes/sharrows along Vance/Kentucky/Center/Reed to form a complete bicycle system connection between the multi-family housing on the east and Belmar Park / Lakewood City Commons on the west. Adding all bicycle lane improvements except the northwest corner curb work to allow a westbound bicycle lane in that location, could be accomplished immediately in the existing roadway width. The westbound bicycle lane between Vance Street and Wadsworth Boulevard requires curb line modifications prior to installation. Adding a raised median between Ohio Avenue and Virginia Avenue on Wadsworth Boulevard will not affect any existing access locations but will require CDOT approval. Maintenance responsibility and funding source for the median installation need to be identified.

Intersection of Virginia Avenue and Wadsworth Boulevard

Today's Conditions

Virginia Avenue at Wadsworth Boulevard is located within the core of Downtown Lakewood and is a critical intersection for vehicular and pedestrian circulation. It provides primary vehicular access to Lakewood City Commons and Belmar and pedestrian crossings to uses on either side of Wadsworth Boulevard. Pedestrian counts taken for the study indicate that over 25 pedestrians cross Wadsworth Boulevard at this location during the weekday noon hour and 24 during the weekday evening peak hour. Pedestrian crosswalk markings are faded and there is only one existing pork chop island on the northeast corner of the intersection which is used heavily by pedestrians to shorten the walking distance across Wadsworth Boulevard. High vehicle volumes and turning movements across each leg of the intersection make this a very busy intersection for pedestrians and bikes.



Pedestrian crossing westbound on Virginia Avenue at Wadsworth Boulevard



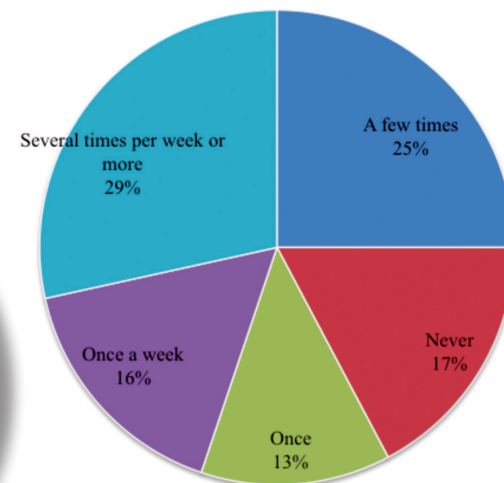
Pedestrian crossing southbound on Wadsworth Boulevard at Virginia Avenue



East side of Wadsworth Boulevard northbound pedestrian facilities

Virginia Avenue links the primary pedestrian uses within the study area; retail, residential, recreation and civic. Enhanced pedestrian crossings were the number one priority of survey respondents.

How often have you walked/biked in Downtown Lakewood in the last month?

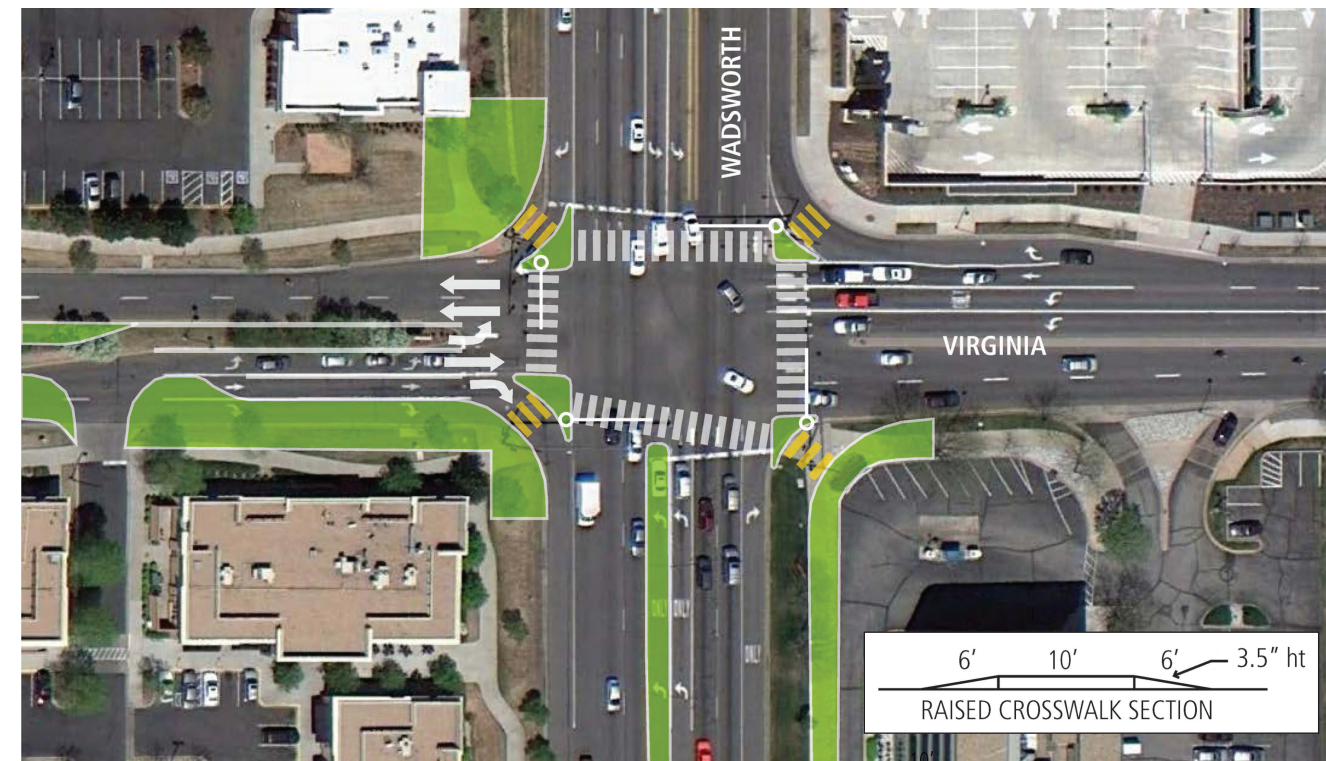


What were the trip purposes of your walking/biking trips?

The top responses are as follows:
 Shopping/Errands-- 17%
 I did not walk/bike-- 13%
 Shopping/Errands, Dining-- 10%
 Recreation/Exercise-- 10%

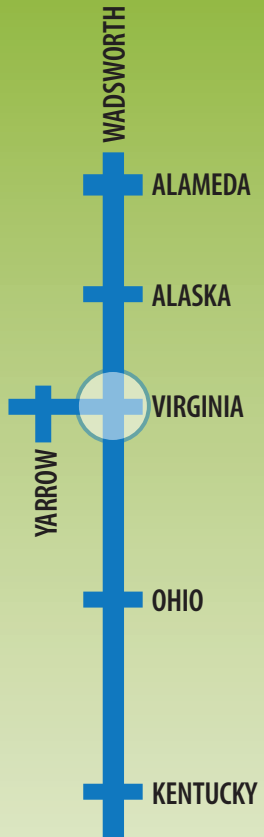
Recommendations

There are a number of improvements recommended at Virginia Avenue and Wadsworth Boulevard designed to enhance the pedestrian experience and highlight this intersection as a critical Downtown crossing. Intersection improvements proposed are: the construction of right turn channelizing islands; curb line modification; raised pedestrian crossings of the channelized right turn lanes; the removal of the median on the west leg of the intersection; and the addition of a median on the south leg of the intersection by removing one of the northbound left turn lanes. The removal of one of the northbound left turn lanes is dependent upon adding a northbound left lane at Wadsworth Boulevard and Alaska Drive. The addition of a northbound left lane at Alaska Drive is expected to reduce left turn demand at Virginia Avenue enough to allow the removal of a northbound left turn lane at Virginia Avenue. These improvements are intended to facilitate safer and shorter pedestrian crossings of the intersection by narrowing the crossing distances, providing refuge areas for pedestrians, and enhancing pedestrian crossing visibility.



Additional improvements to the intersection should include colored crosswalks and median treatments that increase driver awareness of pedestrian activity. The installation of Gateway monument signage at the northwest corner of the intersection highlights the significance of this location to Downtown activity and promotes a recognizable character for the area. Signage on the Lakewood City Commons side of Wadsworth Boulevard compliments the size and scale of the informational signage of Belmar on the east side of Wadsworth Boulevard.

continues on next page



Participation

Stakeholders and the public expressed concern that Virginia Avenue is an uncomfortable pedestrian crossing today, although it is the most used signalized crossing in downtown. Lighting is low and pedestrian markings are often faded and pedestrians do not feel like a priority across this space.

Wadsworth Boulevard Corridor: *Intersection of Virginia Avenue and Wadsworth Boulevard*

Urban Design Recommendations

As one of the locations for the Downtown Gateway sign, this intersection is prominent and highly visible, offering strong opportunities to convey the overall Downtown identity through a complete combination of urban design elements. The intersection marks the boundaries of Belmar to the east and Lakewood Commons to the west. The introduction of a large scale Downtown Gateway on the northwest corner creates balance with the larger vertical Belmar monument on the northeast corner. Coordination with Belmar to add the “Downtown Lakewood” brand to their monument sign will further convey the significance of this location as a gateway to downtown. The addition of the branding on the northeast corner can be achieved through the addition of a low sandstone base wall either separate, or integrated into the current Belmar sign. A low sandstone wall is introduced at the northwest corner, tying into the existing Belmar wall to the east. Colored lighted bollards on top of the wall also complement the existing Belmar lighting to the east. Lighted vertical features are introduced within the median, and at all intersection corners, including “pork-chop” islands, creating strong continuity and night-time wayfinding for pedestrians. Final design of lighted features will need to be approved by CDOT and the City to ensure there is no interference with traffic signal visibility and conspicuity. CDOT typically does not allow lighted features in medians and “pork-chop” islands so their approval will require coordination with CDOT. The northwest corner contains a large pedestrian plaza for queuing before crossing Wadsworth, and creates a strong visual focal point for vehicles stopped at the light or turning from northbound. Specialty paving at intersection corners, colored crosswalks, signature landscape plantings and site furnishings provide additional features in support of the urban design character.



Implementation

Intersection of Virginia Avenue and Wadsworth Boulevard	
Planning Level Capital Cost Estimate:	\$1,700,000 (Intersection improvements) \$400,000 (Downtown Gateway Signage)
Timeframe:	Near
Complexity:	Medium (Downtown Gateway Signage) High (Intersection Improvements)
Potential Project Lead:	City

Notes and Phasing Opportunities: This project is very important to improving pedestrian connectivity between Lakewood City Commons and Belmar and also the Lakewood Transit Center on Allison Parkway, and the multi-family housing east and south of the intersection. Full implementation of the intersection improvements requires implementation of the Yarrow/Virginia median modifications and coordination with Lakewood Commons to relocate existing commercial signage in the west median. Signage would be relocated and Downtown Gateway Signage would be installed. The northwest and southeast corners of the intersection can be modified independently of other improvements, however the south median modifications depend on a northbound left turn lane being opened at the Alaska/Wadsworth intersection. Modifications to the southeast corner of the intersection may impact property owners in that location. Changes to the intersection or anywhere along Wadsworth Boulevard will require CDOT coordination and approval as well as coordination with West Metro Fire on the raised pedestrian crossings.

Intersection of Virginia Avenue and Yarrow Street

Today's Conditions

Virginia Avenue provides access to the Lakewood City Commons development, the Belmar Library, Lakewood City offices, the Lakewood Cultural Center and Belmar Park. The intersection of Virginia Avenue with Yarrow Street is congested due to heavy turning volumes into Lakewood City Commons from the westbound right-turn lane, combined with left-turn movements into Belmar Library and through movements to Lakewood City offices and Downtown Transit Center. Pedestrian activity along Virginia Avenue is high, and many pedestrians cross Virginia Avenue at Yarrow Street to move between shopping, library and park uses. Virginia Avenue extends westward through the roundabout to the Downtown Transit Center, located below the Lakewood City offices. For more information about the recommended Transit Center Improvements see page 33.



View West on Virginia Avenue.



Crosswalk at Virginia Avenue and Yarrow Street, private access to development.

Participation

The plantings in the median along Virginia Avenue block the driver's view of pedestrians approaching the crosswalk. Signage within the median is not visible easily from Wadsworth Boulevard and destinations along Virginia Avenue are not well identified through way-finding signage.



View west on Allison Parkway towards Transit Center.

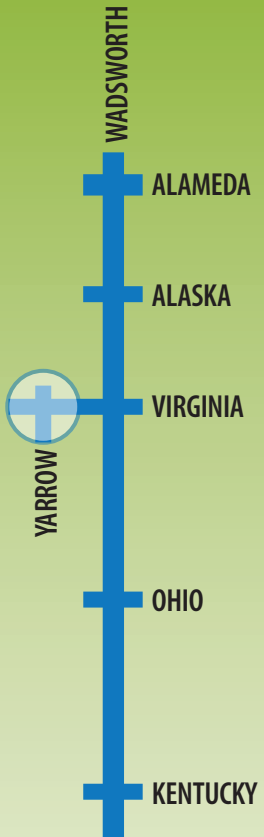
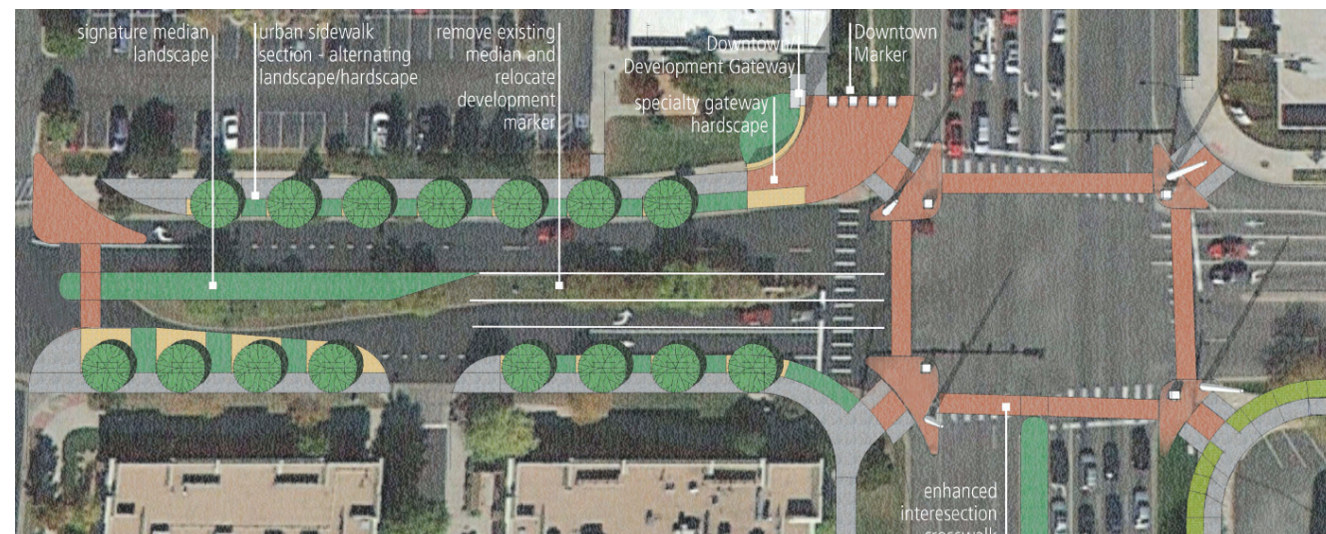
Implementation

Intersection of Virginia Avenue and Yarrow Street	
Planning Level Capital Cost Estimate:	\$530,000
Timeframe:	Long
Complexity:	High
Potential Project Lead:	City/Developer

Notes and Phasing Opportunities: Full implementation of this project requires median modifications on the west leg of the Virginia/Wadsworth intersection as well. An initial easy way to accomplish this improvement would be to remove the dense vegetation from the east median to improve sight distance. Improvements shown to the northeast corner can also be completed independently of other improvements shown and require coordination and approval from Lakewood City Commons.

Recommendations

The proposed improvements are intended to enhance vehicular and pedestrian operations and safety at the intersection of Virginia Avenue and Yarrow Street. They include narrowing the existing east median and removing the dense vegetation within the median to improve visibility. The nose of the median would be extended into the pedestrian crossing on the east side of the intersection to ensure a more defined and visible pedestrian crossing. The south curb line would be relocated to the north to remove one eastbound travel lane and reduce the pedestrian crossing distance across the intersection. A westbound right turn lane channelizing island would be added at the ingress point to Lakewood City Commons, also shortening the pedestrian crossing distance across the intersection. Some parking modifications would be needed at the edge of the development to accommodate the modified turning movement. Streetscape enhancements would include alternating landscape and hardscape creating a more comfortable pedestrian environment.



Wadsworth Boulevard Corridor: *Intersection of Alaska Drive and Wadsworth Boulevard*

Today's Conditions

Alaska Drive today is a right-in right-out entry and egress point from Lakewood City Commons on Wadsworth Boulevard southbound, and Belmar on Wadsworth Boulevard northbound. Alaska Drive is a key pedestrian and shopping corridor within Belmar and an access street within the development of Lakewood City Commons. Because this street links the core of the two primary downtown developments, pedestrians cross between the two locations by using the Wadsworth Boulevard median as a refuge. Pedestrian counts taken during the study show 12 pedestrians crossings at this location during the weekday noon hour and another 8 during the weekday evening peak hour.



View east across Wadsworth at Alaska Drive.



Wadsworth is a pedestrian barrier at Alaska Drive.



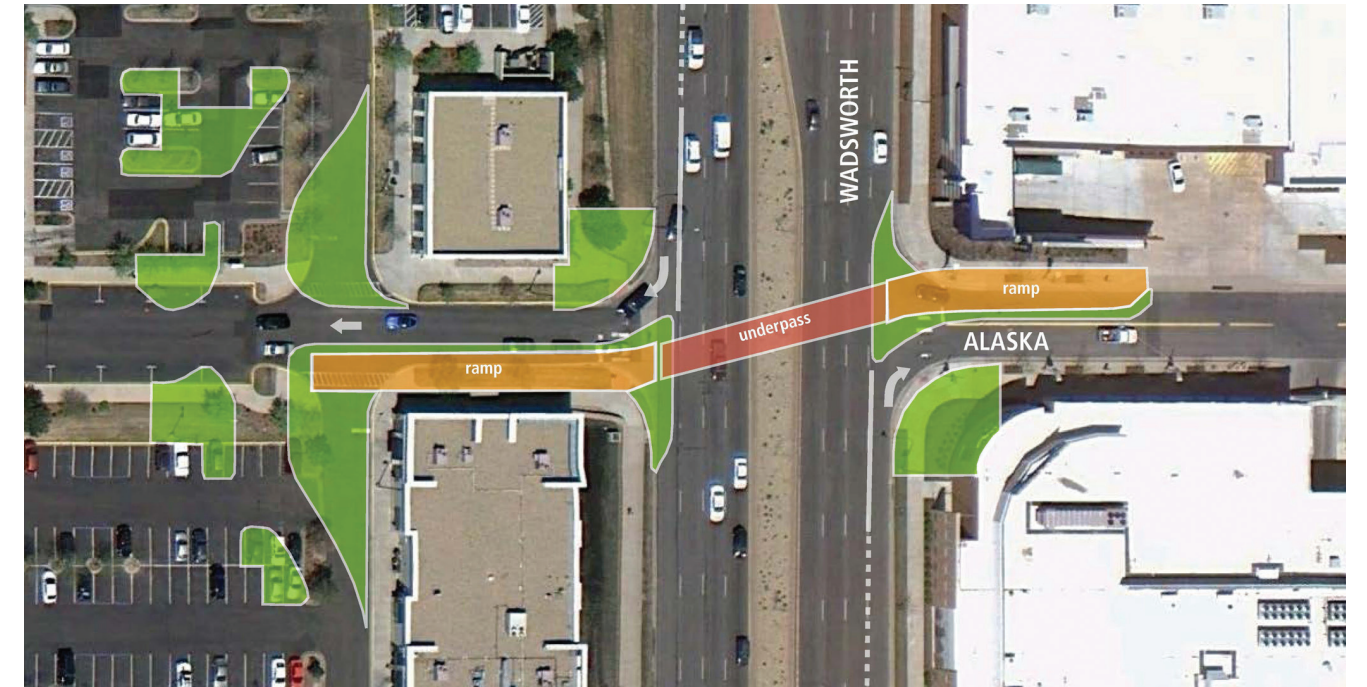
View west across Wadsworth at Alaska Drive.

Participation

At public workshops, many members of the public voiced a keen interest in a pedestrian crossing at Alaska Drive and Wadsworth Boulevard. This location was considered a priority for pedestrians and interest was expressed in an at-grade crossing, a bridge and an underpass to link the uses between Lakewood City Commons and Belmar. Many attendees did not feel safe or comfortable crossing Wadsworth Boulevard.

Over 50% of the web questionnaire respondents indicated that enhanced pedestrian/bicycle crossings of Wadsworth Boulevard would encourage them to make more trips by walking and biking and would make visiting Downtown Lakewood more enjoyable.

Recommendations



There are two options for creating a pedestrian connection between Belmar and Lakewood City Commons at Alaska Drive. The first option (above) is a pedestrian underpass. This option is illustrated in the figure above as angled across Wadsworth Boulevard to maintain right turns into Lakewood City Commons and Belmar while still allowing for enough linear distance to bring the underpass back to grade in compliance with ADA requirements. The width of the underpass would be a minimum of 18' with broad, well lit openings and a median skylight mid-way through the underpass allowing natural light and maintaining an open feeling for users.

The second option (page 13) is an at-grade signalized pedestrian crossing. Initial improvements would include opening up a northbound left turn lane from Wadsworth Boulevard to Alaska Drive, allowing vehicles to access Lakewood City Commons at both Virginia Avenue and Alaska Drive. This addition would reduce northbound turning volumes at the Virginia Avenue /Wadsworth Boulevard intersection and improve overall operations into the area.

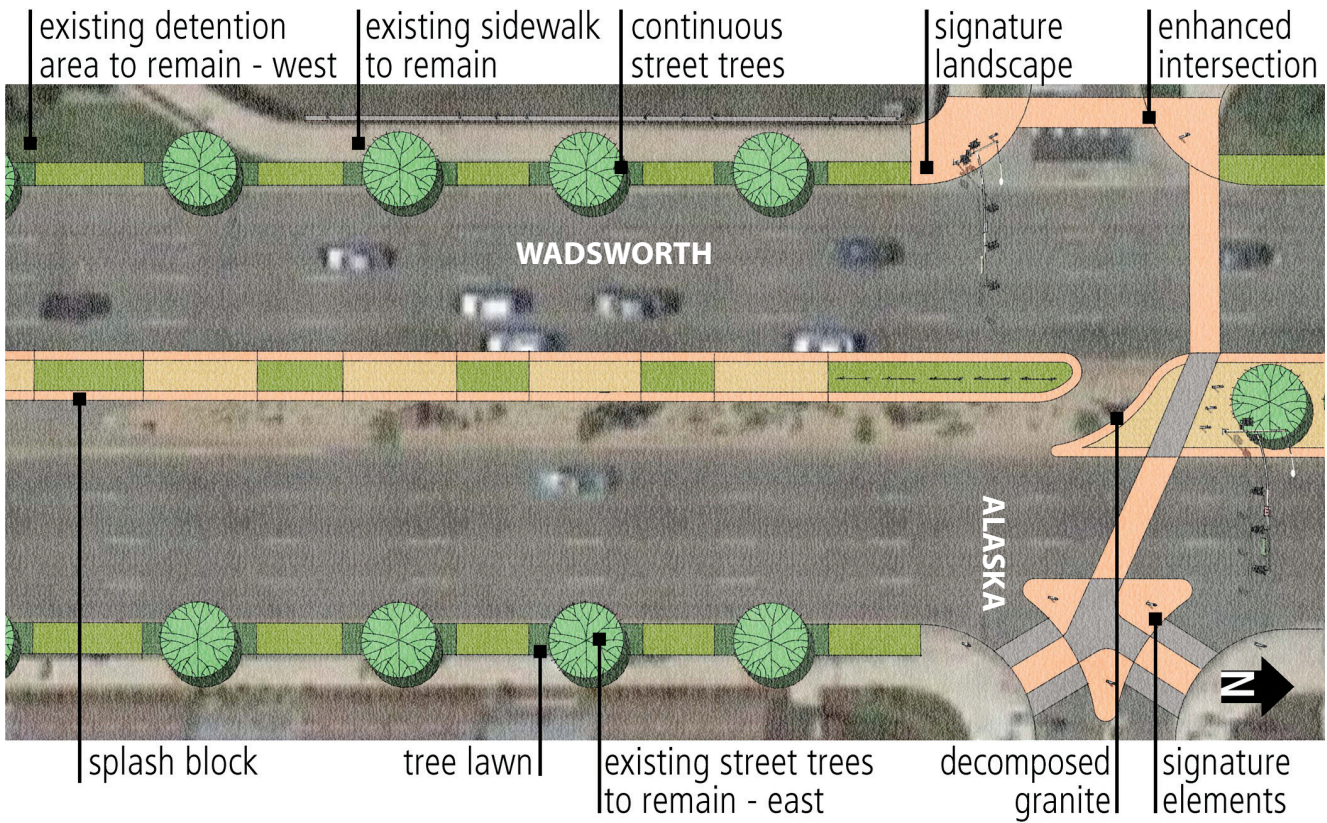
Preliminary analyses indicates that potential impacts to traffic progression along Wadsworth Boulevard related to the installation of a traffic signal at Alaska/Wads are minor and addressable under the assumption that the signal operates as a two stage pedestrian crossing. Although a signalized at-grade crossing of Wadsworth Boulevard at Alaska Drive does not currently meet traffic signal warrants, future redevelopment of Lakewood City Commons that generates significantly more pedestrian activity between Belmar and Lakewood City Commons may allow warrants to be met.



View north on Wadsworth at Alaska Drive.

Urban Design Recommendations

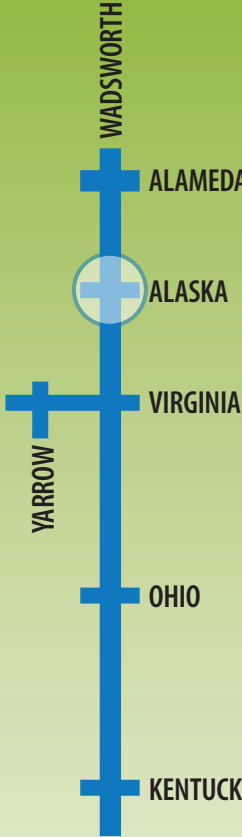
Changes to the operations at Alaska Drive would be enhanced through urban design features including colored crosswalks, median landscape or hardscape and a Downtown identification marker at the southwest corner of the intersection near Lakewood City Commons.



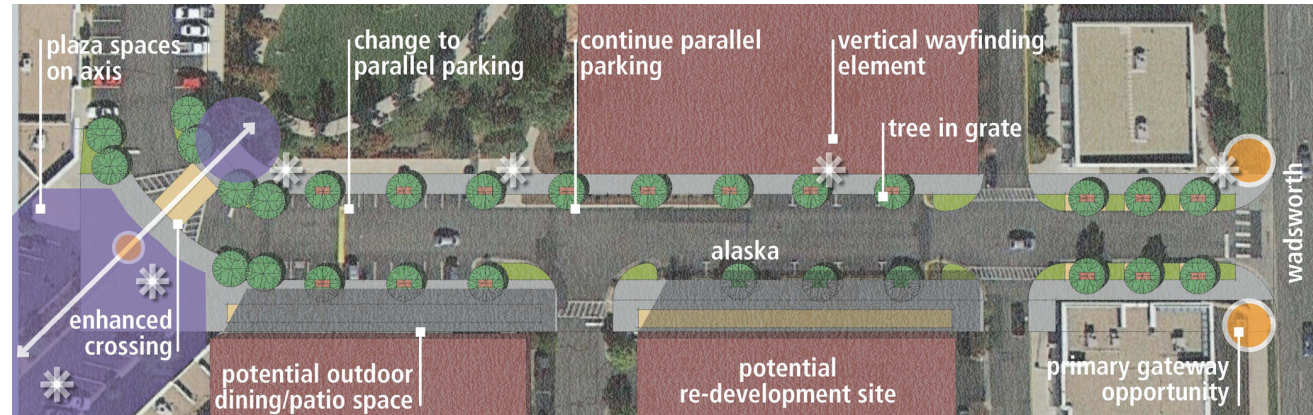
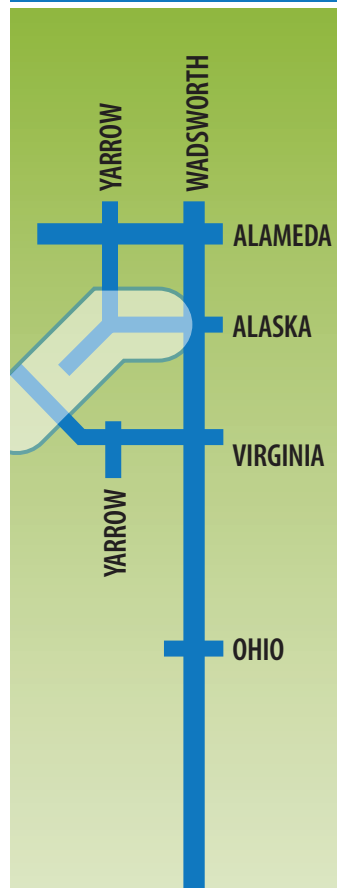
Implementation

Intersection of Alaska Drive and Wadsworth Boulevard	
Planning Level Capital Cost Estimate:	\$810,000 (at-grade) \$3,000,000 to \$5,000,000 (underpass)
Timeframe:	Long
Complexity:	High
Potential Project Lead:	City/Developers

Notes and Phasing Opportunities: The feasibility of both the at-grade and underpass options require significant changes to land use in Lakewood City Commons to provide for more density and higher pedestrian activity levels. A signalized at grade option does not currently meet traffic signal warrants and the location may be problematic for Wadsworth Boulevard traffic operations. Any at-grade modifications or tunnel improvements would require CDOT approval. Initial improvements could include opening up the northbound left turn to allow vehicles accessing Lakewood City Commons to use both Virginia Avenue and Alaska Drive. This would reduce northbound left turning volume at the Virginia/Wadsworth intersection and improve operations.



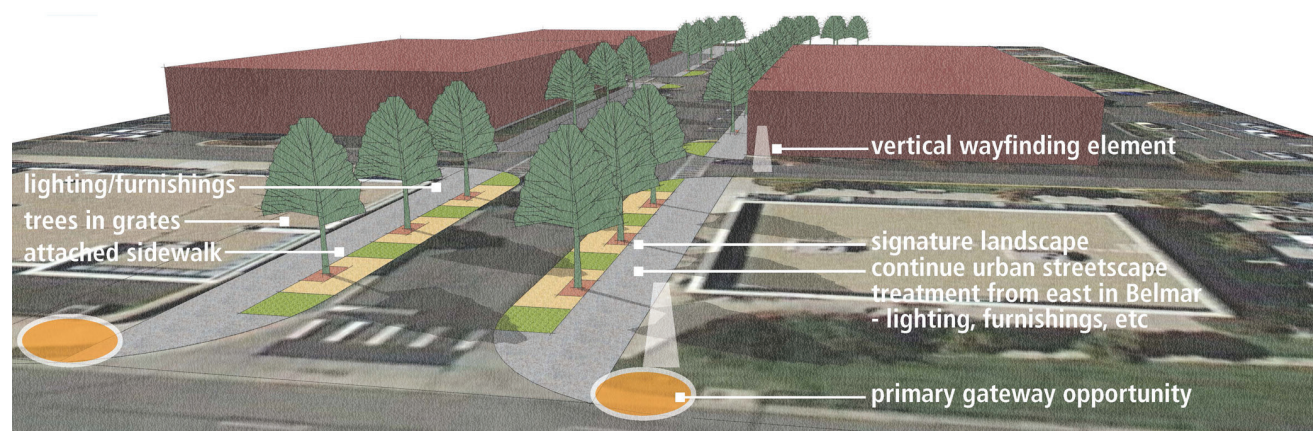
Wadsworth Boulevard Corridor: *Lakewood City Commons Redevelopment Opportunities*



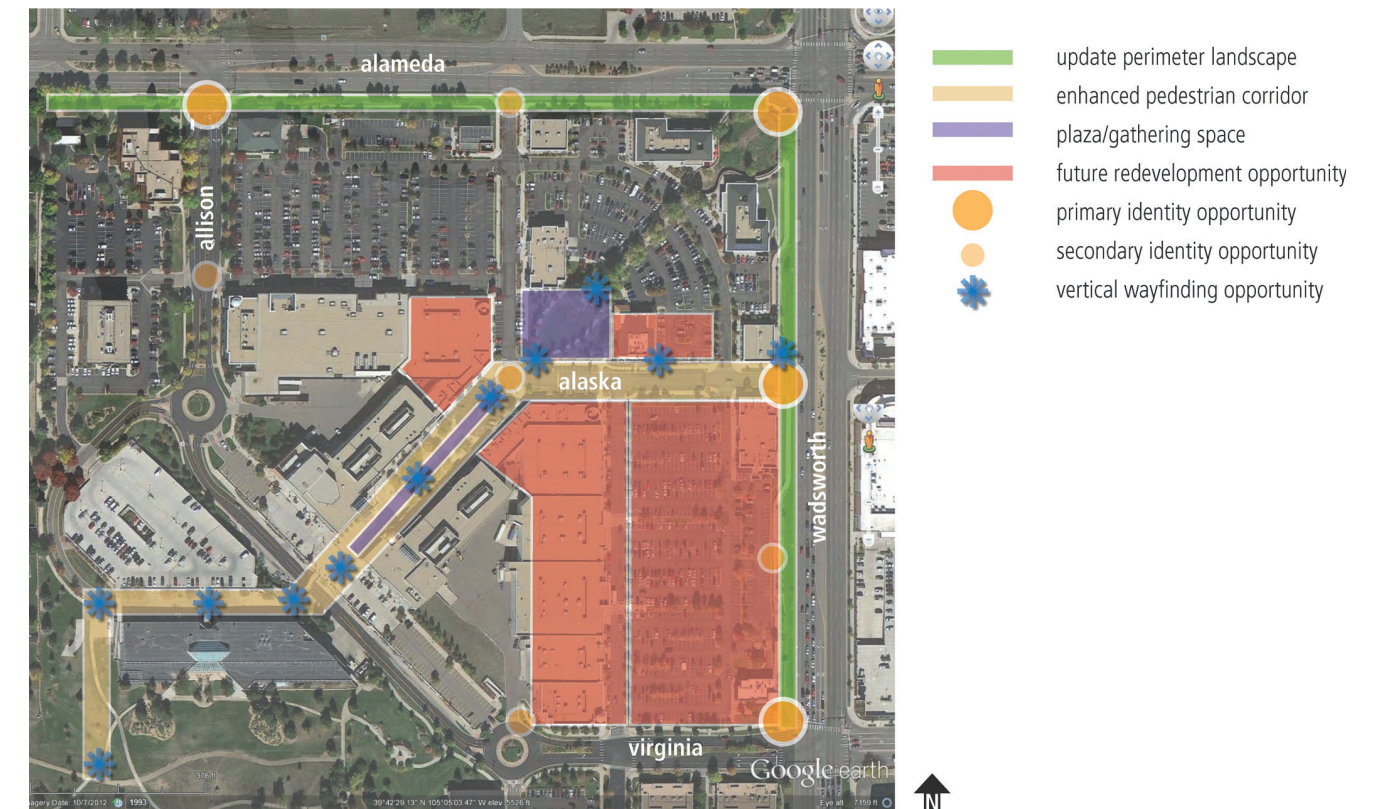
Redevelopment Opportunities

Development within Lakewood City Commons would infill and front the existing drive lane (the private extension of Alaska Drive) and create opportunities for street-level businesses and patios, part of a stronger pedestrian environment. On-street parking would be changed to parallel parking the length of the street and sidewalks would be widened and enhanced with tree plantings and signature lighting for a stronger vertical streetscape into the site. The greater intensity of uses along with the visible and defined pedestrian corridor may increase pedestrian demand to and from the site, and drive the future implementation of a pedestrian crossing at Alaska Drive and Wadsworth Boulevard. Downtown identification markers and Lakewood City Commons signage would be located at the intersection of Alaska Drive and Wadsworth Boulevard. A more intensive development pattern should include mixed-use development within the site, adjacent to the civic plaza or even on north or south of Virginia Avenue in close proximity to Belmar Park, Belmar Library and the Downtown Transit Center.

The figures above and below illustrate a concept for the redevelopment of parts of Lakewood City Commons in a manner that supports greater intensification and mix of uses.



The feasibility of both the at-grade and underpass options require significant changes to land use in Lakewood City Commons to provide for higher density and greater pedestrian activity levels. The figure below illustrates Alaska Drive as a pedestrian corridor through Lakewood City Commons linking retail uses, the civic plaza and Belmar Park. This pedestrian spine would be supported by wayfinding signage, the redevelopment of land uses on the site and a more active pedestrian environment through the site. The edges of the site along Wadsworth Boulevard and Alameda Avenue would create a stronger visual identity through the addition of landscape and hardscape improvements and urban design features. The stronger pedestrian environment would encourage increased pedestrian activity and clear connectivity to City Center and Belmar Park.



Lakewood City Commons, in the future, should be developed to include a mix of uses - residential, retail and office that reflect a more urban environment consistent with the intent of the Downtown Lakewood area.

Today's Conditions

Alameda Avenue east of Wadsworth Boulevard to Pierce Street is an important corridor segment serving Belmar and neighborhoods north of Alameda. Wide detached sidewalks and streetscape are present on the south side of the street between Pierce and Wadsworth and pedestrian and bicycle activity is high along this segment. On the north side of Alameda Avenue there is a 5' attached sidewalk in place between Pierce Street and Wadsworth Boulevard, although it is disjointed with portions of it straight along Alameda Avenue and others curvilinear. Development along the north side of Alameda Avenue consists of retail uses set back some distance from the roadway with parking and drive aisles breaking up continuity in the pedestrian facilities.

The intersection of Alameda Avenue and Teller Street is an important link between Belmar and the neighborhoods north of Alameda Avenue. The intersection is signalized and marked with pedestrian crosswalks. However, vehicular turning volumes northbound and southbound from Alameda Avenue at Teller Street can make crossings uncomfortable. Teller Street north of Alameda Avenue is a major connection into the neighborhoods to and from Downtown and Belmar. There are no sidewalks along Teller Street approaching Alameda Avenue except along the east side of the street adjacent to the Belmar Crossing Shopping Center and farther north adjacent to an apartment complex.

Pedestrian crossing northbound at Alameda Avenue and Teller Street



Pedestrian crossing westbound at Teller Street and Alameda Avenue



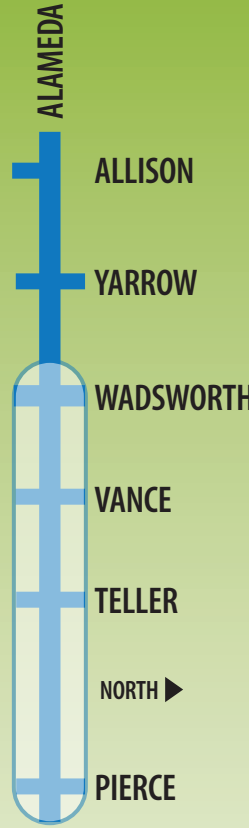
Roadway and streetscape improvements should enable all modes along Alameda Avenue. Teller Street is a key entrance to Belmar for the neighborhoods

Participation

Connections from the neighborhoods north of Alameda Avenue to Belmar and Downtown Lakewood is very important. Pedestrians should be comfortable walking along and crossing Alameda. Downtown Lakewood identity should be visible and recognizable along Alameda Avenue. Roadway and streetscape improvements should enable all modes along this important street.

Recommendations

Alameda Avenue and Wadsworth Boulevard is the primary intersection in Downtown Lakewood. Improvements to the intersection include more visible pedestrian crossings and signature Gateway Monument signage at the southwest corner of the intersection denoting the arrival into Downtown. Improvements to Alameda Avenue include installation of medians between Vance and Pierce Streets, the potential removal of the westbound left turn lane from Alameda Avenue to Teller Street, implementation of westbound double left turn lanes from Alameda Avenue to Saulsbury Street, and enhanced pedestrian crossings across Alameda Avenue at all intersections. Pedestrian access from the neighborhoods north of Alameda should be improved with new sidewalks along Teller Street approaching Alameda Avenue. These sidewalk connections should be developed with any redevelopment of properties along this street or with future City or grant funding.



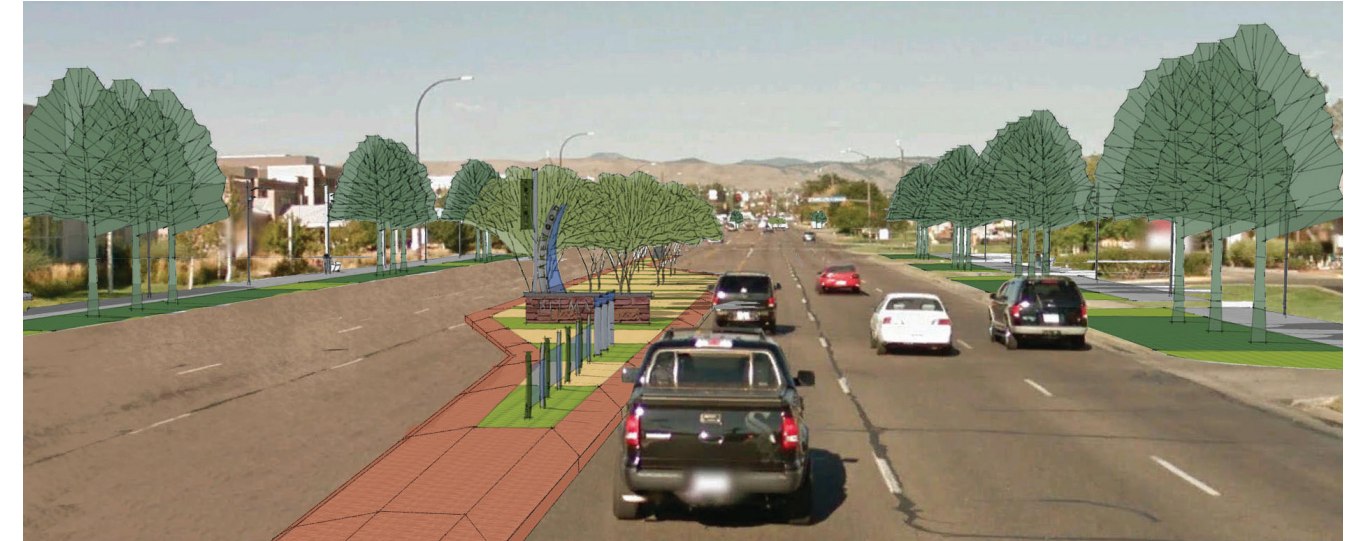
Alameda Avenue Corridor: *Wadsworth Boulevard to Pierce Street*

Urban Design Recommendations

Urban design features at Teller Street include a pedestrian crossing on the east side of the intersection that is 20' feet wide or more, and enables pedestrians to cross within the signal timing or utilize the extended nose of the median as a refuge.



The expansive median from Pierce to Vance creates a strong opportunity to showcase urban design features along the Alameda corridor. Repetitive lighted vertical features are located at the ends of medians, complementing the gateway signs and conveying the urban design character at night. Colored concrete median splash-plates are continued through the hardscape as colored concrete crosswalks, the most significant at Teller. The Teller crossing also contains lighted stone bollards in the pedestrian refuge zone, enhancing pedestrian safety and further conveying the urban design character. Consistent placement of pedestrian lighting and site furnishings tie together the north and south sides of the corridor, while still allowing visibility into adjacent retail/commercial zones, some of which have large setbacks from the street.



A median Gateway Monument on Alameda Avenue would be located just west of Pierce Street. Additional identification signage for Downtown Lakewood or Belmar would be located on the south side of Alameda Avenue at Teller Street highlighting the entrance to Belmar.

Implementation

Wadsworth Boulevard to Pierce Street	
Planning Level Capital Cost Estimate:	\$5,000,000 (Median and Intersections) \$22,000 (Downtown Identity Marker)
Timeframe:	Near
Complexity:	Medium
Potential Project Lead:	City/Developer/BID

Notes and Phasing Opportunities: The key element for pedestrian connectivity is the enhanced pedestrian crossing at Teller Street that is critical to connecting the neighborhoods north of Belmar to Belmar. It is difficult to phase the median and intersection improvements one element at a time due to the significant shift of the curb line to the south and the addition of a median the length of the project area.

Today's Conditions

Allison Parkway provides vehicular access to Lakewood City Commons development from Alameda Avenue. The demand for westbound left turns at the Allison Parkway and Alameda Avenue intersection exceeds capacity during peak traffic periods. The intersection of Allison Parkway at the entrance adjacent to King Soopers is congested due to heavy traffic volumes, conflicts between turning vehicles, parking operations within City Commons and pedestrian traffic across the intersection and between the parking lot and the King Soopers entrance. Traffic on Allison Parkway nearing the City offices or Downtown Transit Center is much lighter than within this first segment accessing Lakewood City Commons development.

The streetscape along Alameda Avenue west of Wadsworth Boulevard in Downtown Lakewood includes mature deciduous and evergreen trees on the south and some still undeveloped property to the north. Sidewalks on the south side of the street are detached and meandering as an element of the Lakewood City Commons development landscape. On the north, the sidewalk is attached along Alameda except for undeveloped parcels. Identification markers for Lakewood City Commons are found in the median on Allison Parkway at Alameda, rather than along Alameda Avenue. Public art is installed in the median on Alameda Avenue.



Allison Parkway congestion at King Soopers intersection.



Sidewalks on the south side of the street are detached and meandering as an element of the Lakewood City Commons development landscape.

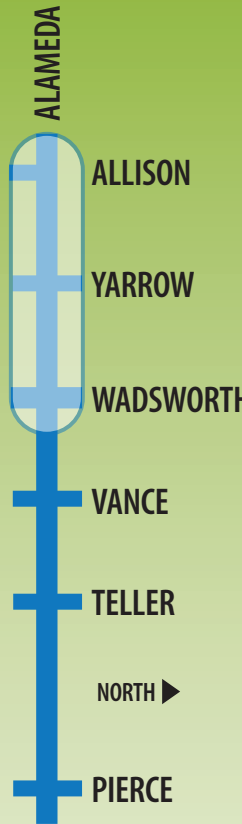
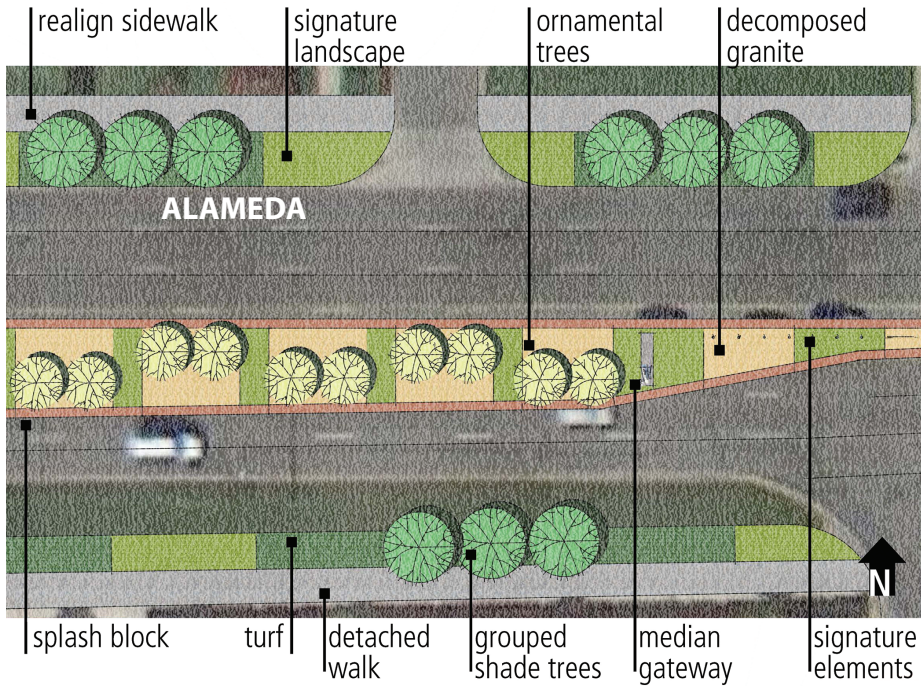
Participation

Alameda Avenue is planned to be a Parkway through Downtown. Recognizable identity and streetscape is important for this corridor.

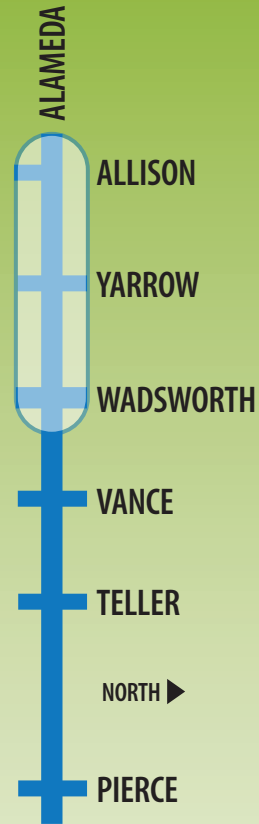
Recommendations

The proposed improvements on Alameda Avenue west of Wadsworth Boulevard include modifying the median east of Yarrow Street, opening up a westbound left turn lane from Alameda Avenue to Lakewood City Commons at Yarrow Street, and restricting north and southbound left turns from Yarrow Street to Alameda Avenue. The new left turning movement into Lakewood City Commons at Yarrow Street will divert some left turn demand from Alameda Avenue at Allison Parkway and the King Soopers access off Allison Parkway and alleviate congestion in this area.

The city standard detached sidewalk should be added between Ammons Street and Yarrow Street where it is currently missing. A continuous pedestrian facility along the north side of Alameda Avenue will improve connectivity between Downtown and medical facilities and Colorado Christian University.



Alameda Avenue Corridor: *Allison Parkway to Wadsworth Boulevard*



Urban Design Recommendations

Urban design elements and streetscape enhancements to Alameda Avenue in this segment focus on creating visual interest and conveying the identity of Downtown Lakewood with markers within the large median. Gateway elements at a scale consistent with the median are located in the median both east and west of Wadsworth Boulevard. Key design elements include:

- Expanded median locations and widths tied to roadway and circulation improvements
- Consistent median design with colored concrete splashplate, structured plantings, decomposed granite bands, ornamental tress
- Consistent tree lawn with alternating tree and planting beds between the sidewalk and back of curb
- Addition of pedestrian lighting to both sides of the street



Implementation

Allison Parkway to Wadsworth Boulevard	
Planning Level Capital Cost Estimate:	\$422,000 (Gateway and Identity Markers) \$210,000 (Alameda/Yarrow Intersection)
Timeframe:	Near
Complexity:	Low (Alameda/Yarrow Intersection) Medium (Gateway and Identity Markers)
Potential Project Lead:	City/BID

Notes and Phasing Opportunities: This project will relieve congestion at the Alameda/Allison intersection and improve operations at the King Soopers entrance. Included in the project cost are one Downtown Gateway and one Downtown Identity Marker. Final Downtown Gateway and Identity marker installation locations to be determined based on coordination with property owners, Community Resources, and Lakewood Public Works.

Pedestrian Connectivity at Alaska Drive/Nevada Place

Today's Conditions

At the intersection of Pierce Street and Nevada Place there is a pedestrian connection into Belmar at the sidewalk in front of the Young Ameritowne building. There is no pedestrian crosswalk or signage at the intersection of Nevada Place and Pierce Street today. There is an existing sidewalk in place on the west side of Pierce Street from Alameda Avenue to Kentucky Avenue, ultimately linking up with the Wadsworth Boulevard pedestrian underpass at Kentucky.



Existing crossing at Pierce Street



Connection in front of Young Ameritowne



Connection into Belmar

Residents would like to see more visible and defined connections along Pierce that encourage walking or biking into the Belmar area.

Participation

Many public workshop attendees voiced an interest in connecting the neighborhoods east of Pierce Street to Belmar. Pierce Street is a local bicycle route that brings residents south of Belmar to uses along Alameda Avenue and north of Alameda Avenue. Residents would like to see more visible and defined connections along Pierce that encourage walking or biking into the Belmar area.

Implementation

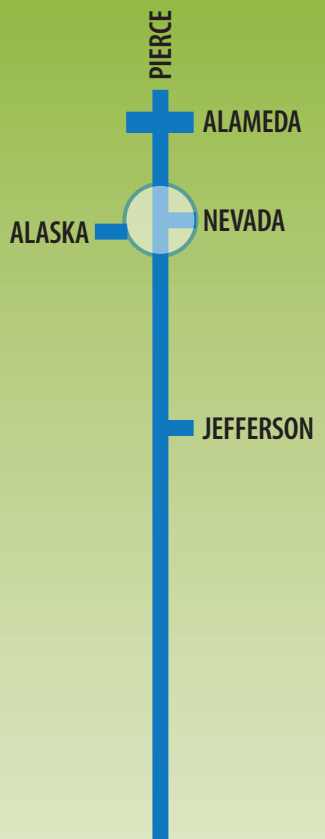
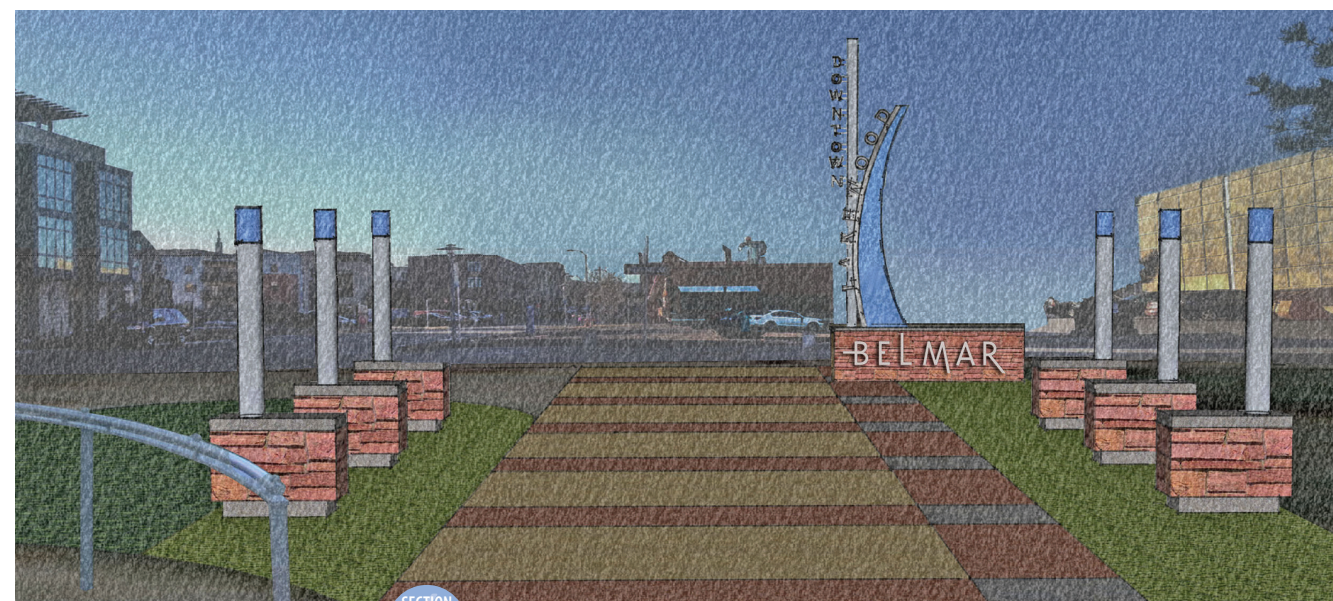
Pierce Street Pedestrian Connection at Alaska/Nevada Avenue

Planning Level Capital Cost Estimate:	\$50,000
Timeframe:	Near
Complexity:	Low
Potential Project Lead:	Developer

Notes and Phasing Opportunities: Work with Belmar and Young Americans Center for Financial Education to finalize the implementation elements and locations.

Recommendations

Urban design, signage improvements and lighting will make the existing pedestrian connection visible and identify it as open to the public. In addition, a marked crosswalk across the south leg of the Pierce Street at Nevada Place intersection should be installed to improve pedestrian connectivity between Belmar and the neighborhoods east of Pierce Street. Coordination with the property owner and easement would be needed, and improvements should be designed to account for emergency overflow from the south detention pond for Belmar.



Pierce Street Corridor: *Pedestrian Connectivity near Jefferson Place*

Today's Conditions

Pierce Street is a popular pedestrian and bicycle route today and crossings of Pierce Street are enabled by the signalized pedestrian crossing located just north of Jefferson Place. An informal social path runs west from Pierce along the edge of the fencing and through the gate to residential units fronting Center Avenue.



Existing dirt connection path.



An informal social path runs west from Pierce along the edge of the fencing..

Recommendations

The informal pedestrian connection north of Jefferson Place should be improved as a hard surface connection between Pierce Street and Center Avenue providing a connection between residential and senior housing at Pierce Street and retail uses and transit connections in Belmar. Extending the connection to Center Avenue allows for additional connectivity to sidewalks along Saulsbury Street and into Belmar. Downtown wayfinding signage at the Pierce Street connection would increase visibility and identify the location as a public pedestrian access point. Easements would be needed for implementation west of Pierce Street, north of Center Avenue and across the Belmar detention area.



Implementation

Pierce Street Pedestrian Connection Near Jefferson Place

Planning Level Capital Cost Estimate:	\$55,000
Timeframe:	Near
Complexity:	Medium
Potential Project Lead:	City/Developer

Notes and Phasing Opportunities: An easement would need to be negotiated for the connection through south end of the Atria Inn at Lakewood property.

Introduction

Urban design features are elements in the public realm that define an area's sense of place and character. These can include architectural styles, street furnishings, lighting, paving and landscape materials and signage. In areas such as Downtown Lakewood where a consistent architectural style is lacking, urban design elements can become the primary place-making component of the design by bringing continuity and identity. In addition to varied architectural styles, Downtown Lakewood's landscape, lighting and furnishings palette are diverse. This section discusses how urban design treatments and a consistent and recognizable signage program can help to develop an identity and secure sense of place for Downtown Lakewood.



Urban Design Elements

Today's Conditions

With an eclectic mix of existing land uses and architecture dating from the 1970's to today, Downtown Lakewood currently lacks a consistent identity or urban design palette. Contemporary and traditional design styles are found in signage, lighting, benches and other amenities, located amidst varying landscape treatments. Lakewood City Commons and Belmar areas have distinct differences in their architectural styles which reinforces the lack of cohesive identity for Downtown.



Recommendations

Urban design elements are introduced at the Downtown gateway locations and carried throughout the Downtown. Linear and repetitive elements such as lighting, median plantings, low walls and street trees are particularly critical to capturing the attention of drivers at higher speeds. Vertical elements are needed to compete with the wide roadways and large architectural facades. In order to be successful, both of these styles of elements need to be carried throughout the streetscape. A strong and consistent application of urban design elements to the public right-of-way will lead to a stronger identity and sense of place for Downtown Lakewood.

Key elements of the urban design palette for Downtown Lakewood include:

- Contemporary lighting style that ties together the east and west sides of the Wadsworth and north and south sides of the Alameda corridor.
- Use of colored LED lighting to add night-time continuity and interest to the streetscape.
- Implementation of a common furnishings palette.
- Implementation of a signature landscape palette.
- Implementation of a common materials palette.
- Consistent street tree placement to create an urban tree canopy while still allowing visibility into businesses.
- Use of high-quality accent materials at key intersections and pedestrian corridors.
- Use of high-quality materials for signage and wayfinding elements.

Design Elements

The proposed pedestrian and vehicular connectivity improvements create opportunities for placement of gateways, signage, furnishings and signature landscape in right-of-ways and medians throughout the downtown core to support a common identity. The Downtown Lakewood identity uses the following key elements to convey design character, enhance identity and support connectivity goals:

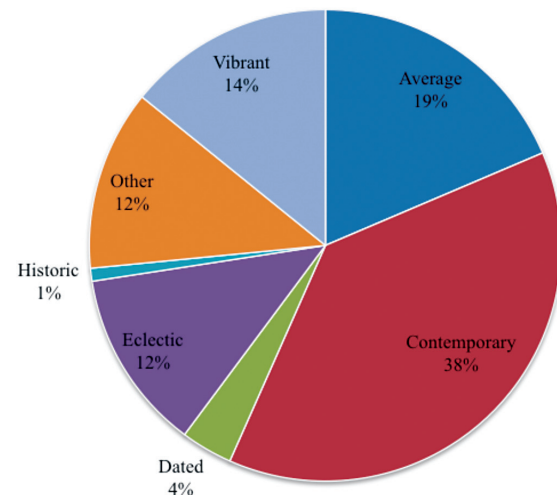
- Gateways and signage
- Consistent lighting and furnishing placement
- Signature landscape palette
- Consistent tree lawn treatments
- Consistent median treatments
- Enhanced intersection corners and crosswalks

Brand

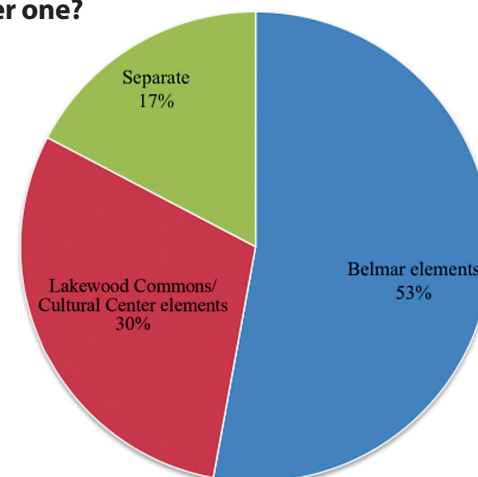
Visual preference and survey results confirmed that the "Downtown Lakewood" branding will be used throughout the study area. The branding may be incorporated into both private and public signage and design elements to reinforce the area identity.

Participation Web Questionnaire Results:

What word best describes the current character of Downtown Lakewood?



Should Downtown Lakewood streetscape character have a separate identity from both Belmar and Lakewood City Commons/Cultural Center or should it incorporate elements of either one?



Visual Preference Study key findings: Consider expansion of Belmar styled lighting or similar along Wadsworth and Alameda corridors, expand use of materials such as ambient/reflected light and blue LEDs, less garden style design and greater contemporary designs, incorporate banners and lantern style lighting similar to Belmar, combine contemporary styling with some traditional materials, develop alternatives for typical intersection treatment and pedestrian crossings, explore alternatives for signature elements as part of gateways and linear features.

Lighting and Furnishings

Example lighting and furnishings are shown below. Designs are intended to be simple, contemporary, functional and comfortable. A grey or aluminum/stainless finish are recommended to tie into proposed signage designs and existing lighting styles. Blue LED lighting accents are provided in vertical bollards or at the base of walls to enhance nighttime connectivity in the streetscape.



Enhanced intersection corners and crosswalks

In support of gateways and signage, key intersections will provide a visual focal point for conveying the downtown identity and providing visual connectivity for pedestrians. Intersection corners shall showcase a wide range of identity elements including lighting, furnishings, signage, landscape and hardscape. Colored concrete hardscape plazas and crosswalks are to be used where appropriate.

Medians

A consistent colored concrete median splashplate is recommended. Decomposed granite fines are to be used in place of large rock cobble in planting beds. Median bollards are included in narrow median areas to provide enhanced nighttime identity. Suggested median designs are illustrated in the corridor connectivity section. Medians along Alameda Avenue are assumed to provide additional opportunities for public art, in conjunction with urban design elements.

Signature landscape palette

The intent of the landscape palette is to provide structured, organized plantings and in support of the overall identity. Selected plantings are intended to be maintainable, sustainable and low-water use. Columnar trees are recommended in most tree lawn areas to lessen conflicts with roadway traffic and maintenance. Tan or red decomposed granite fines are to be used in planting beds. Median and streetscape shrub beds are intended to be planted in consistent rectangular on-center spacing versus an organic naturalized form. Turf materials, planting locations and methods should meet standards as identified in the City of Lakewood Municipal Code.

Suggested landscape palettes include the following:

Ornamental Grass	
Blue Avena Grass	Helictotrichon sempervirens
Feather Reed Grass, Variegated	Calamagrostis x acutiflora 'Avalanche'
Little Bluestem	Schizachyrium scoparium 'The Blues'
Switchgrass, Red	Panicum virgatum 'Shenandoah'
Zebra Grass	Miscanthus sinensis 'Zebrinus'
Perennial/Ground Cover	
Colorado Bluestar	Amsonia jonesii
Daisy, Denver	Rudbeckia
Daisy, Dwarf Shasta	Leucanthemum compact 'Snow Lady'
Hyssop, Coronado	Agastache aurantiaca
Penstemon, Elfin Pink	Penstemon barbatus 'Elfin Pink'
Penstemon, Firecracker	Penstemon eatonii
Sage, Fringed	Artemisia frigida
Speedwell, Goodness Grows	Veronica spicata 'Goodness Grows'
Sundrops, Prairie Lode	Calylophus serrulatus 'Prairie Lode'
Yarrow, Golden	Achillea 'Coronation Gold'

Signage Locations

Today's Conditions

A plethora of signage types and styles exist throughout Downtown Lakewood today. This signage, coupled with a mix of land uses and architectural styles from the 1970's to the present, contributes to the lack of recognizable identity.



Signage throughout Downtown Lakewood

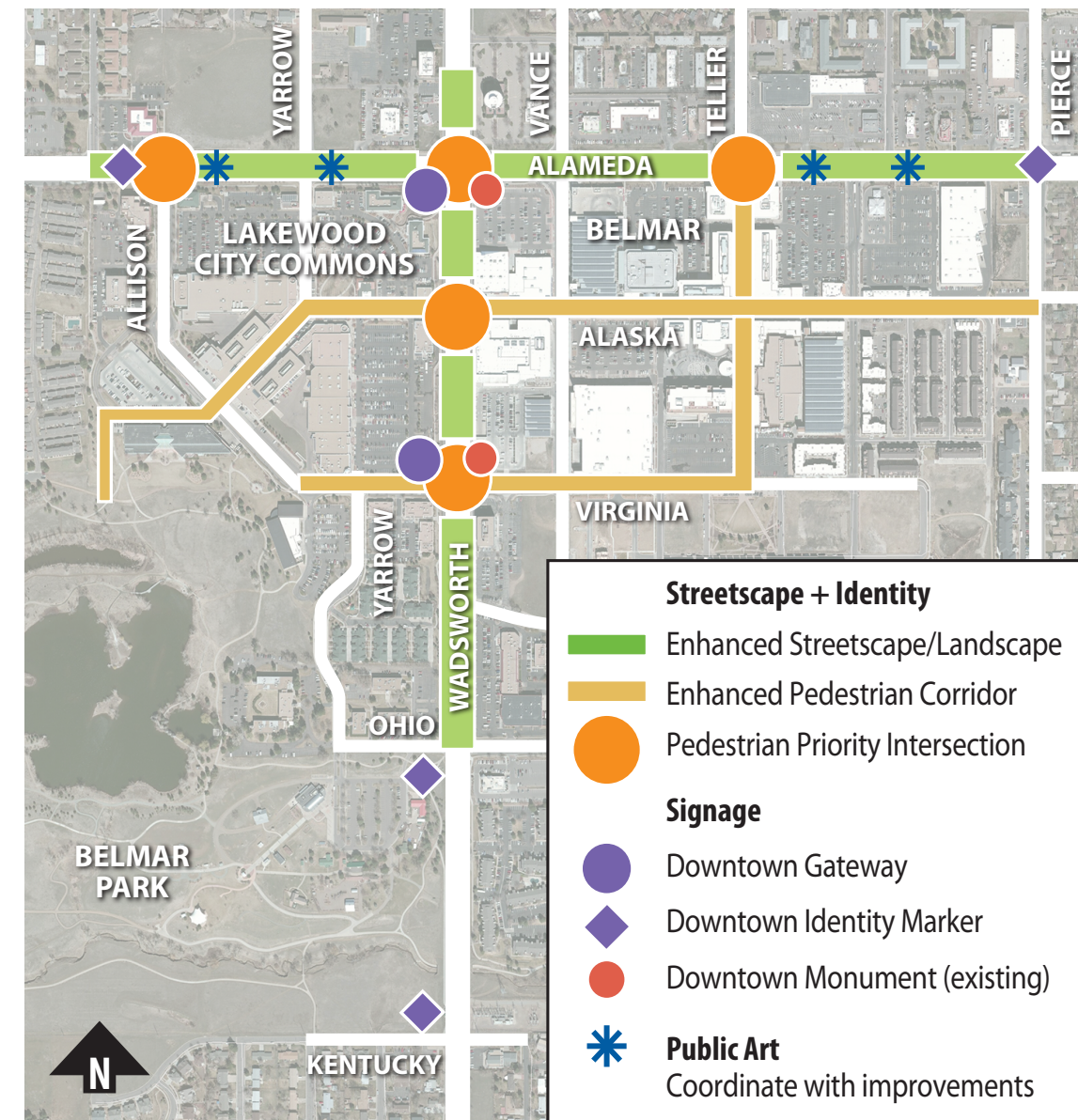


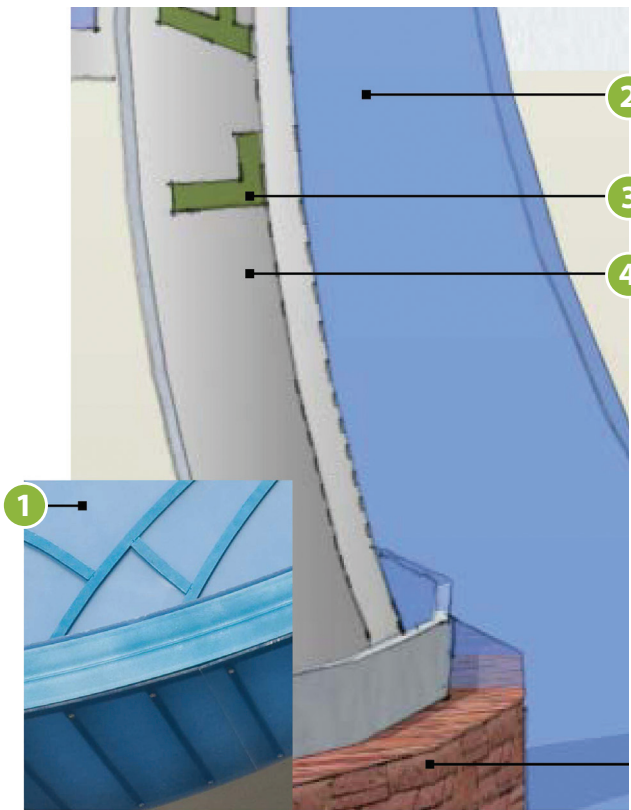
Participation

Visual preference study results and web-survey respondents preferred a signage design that was contemporary with traditional accents. The preferred character should reflect materials and architectural features found on both the east and west sides of Wadsworth Boulevard, creating a feeling on continuity throughout the downtown.

Recommendations

The proposed signage elements for Downtown Lakewood reflect the public's input on style and character and signify the entry points to downtown. The signage elements consist of Monument Gateway and Downtown Identity Markers, as well as suggestions for modifying private signage over time to appear more consistent with downtown identity.



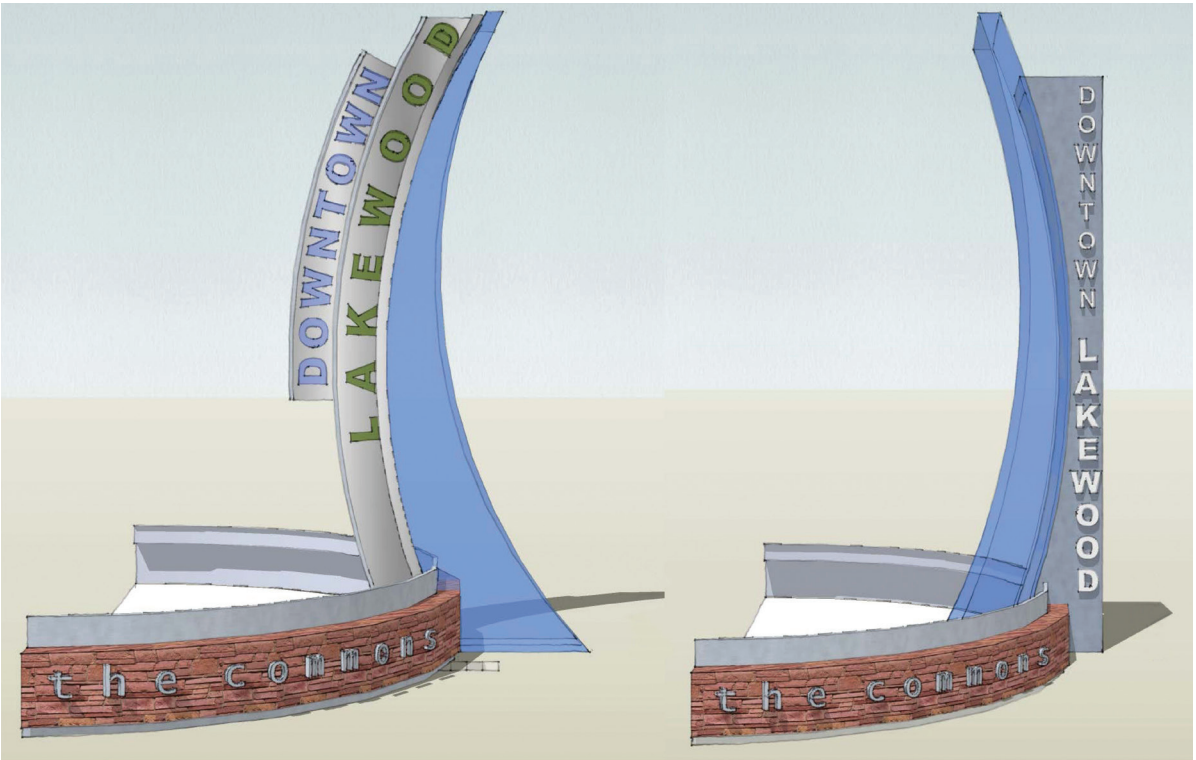


- 1. Blue translucent material example
- 2. Colored or illuminated translucent curved forms
- 3. Extruded or pin mount illuminated lettering
- 4. Aluminum finish

Signage Materials

The proposed signage designs blend contemporary forms with traditional Colorado materials. The vertical orientation of the gateways creates impactful features that will be easily visible from the street while walking, biking or driving. The large scale of the gateways is necessary to compete with the existing and proposed architectural scales within the downtown. The contemporary curved form provides a unique and identifiable common shape for wayfinding. The blue translucent materials reflect the name “Lakewood” and provide another easily identifiable wayfinding component. Common elements are used to tie together each level of sign design to each other and the surrounding context. A red sandstone veneer base reflects the use of this material along the east side of Wadsworth Boulevard and the existing Belmar monument sign at the southeast corner of Wadsworth Boulevard and Alameda Avenue. This base is transferable to private development ID and tenant signs, which brings additional consistency to signage along the corridors. The use of aluminum/stainless metal finishes create an contrast with the red sandstone base and build on the color scheme already in place for lighting and furnishings at Belmar.

These concept drawings are not final designs, but indicate possible options for Gateway Monuments in Downtown Lakewood.



Downtown Gateway Monuments

Gateway Monuments are placed at key locations to signify major entry points to the core of Downtown. They should be iconic markers of the Downtown area and viewable from a significant distance from Downtown.

Gateway Monuments should draw attention to the area and should be significant enough in scale and character to help establish identity for Downtown Lakewood and the City in general. The Gateway Monuments should reflect the components identified in the Sign Materials section. Text on the vertical portions of the Monuments, should it be included, will be limited to “Downtown Lakewood” only. Locations for gateway features are indicated in the signage locations map.

Downtown Identity Markers

Downtown Identity Markers are smaller in scale to the Gateway monuments, yet are also part of the signature package of signage for the downtown area. Typically these smaller gateway features are located within the median or at the street edge in the downtown area. Median gateway locations are also shown in the signage locations map.



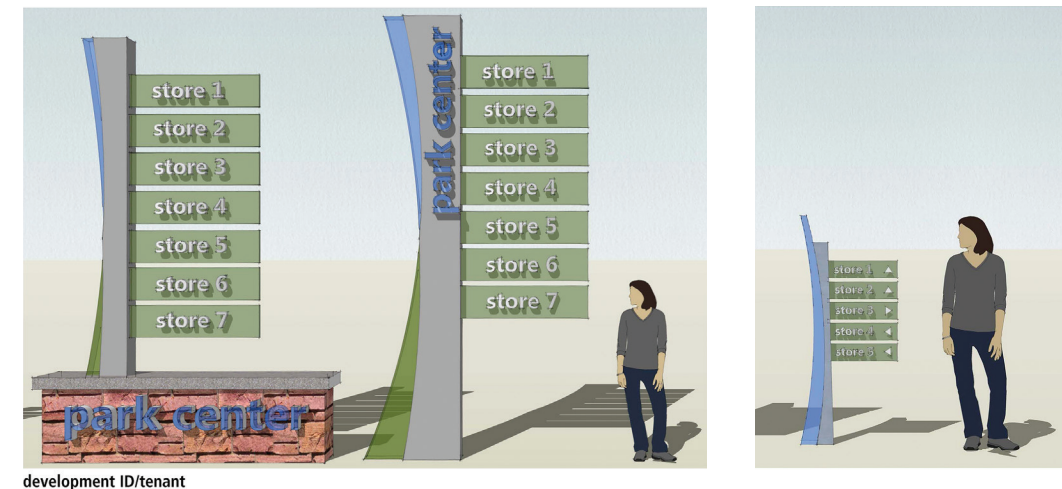
Private Signage Style

Signage in the Private Realm

The plethora of signage styles and design options found throughout downtown are inconsistent with the vision for a more unified Downtown Lakewood in appearance and visual identity. The design recommendations for signage in the public realm can be easily transferable to components of private signage in a phased approach. For example, the red sandstone veneer base of the public sign style is transferable to private development ID and tenant signs, bringing a framework for consistency for numerous corridor tenants. Private signage will be restricted to the horizontal wall elements and no greater than 6 feet in height. Sign bases cannot interfere with drainage.



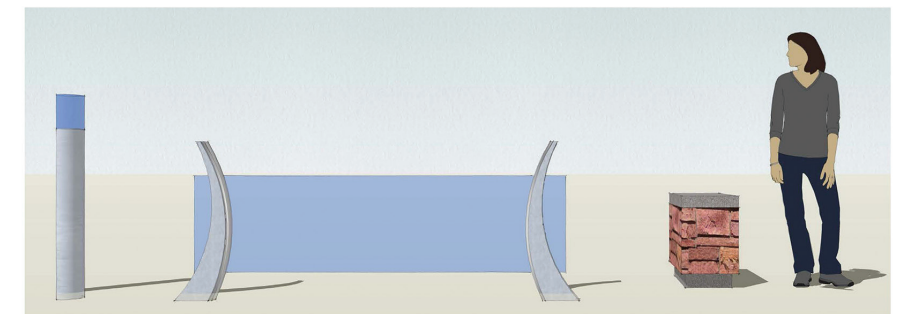
Examples of potential retrofitted signs.



These concept drawings are not final designs, but indicate possible options for Private Signage in Downtown Lakewood.



Private development signage examples in Colorado



Introduction

Wayfinding relates to the built natural environment and makes streets, neighborhoods, and the city more “legible”, helping people to find their way. Wayfinding is more than signs – it includes names, maps, new media, and elements of the public realm such as lighting, street furniture and public art benefits to residents, businesses, and tourists.

For the wayfinding system to work, it must be able to support the movement needs of all. Understanding how different groups navigate and what type of information they need forms a fundamental part of any wayfinding strategy.

Wayfinding systems are becoming increasingly commonplace in cities around the world. They provide a sense of identify and place, ensuring visitors and residents alike can explore and visit key destinations and attractions in their area.

‘Wayfinding is more than connecting A to B, it encompasses all urban behavior, from orientation to identification to exploration to discovery.’

**Identify and
Connect Places**

**Encourage
Exploration
Wandering &
Discovery**

**Stimulate
Economic
Growth**

**Build
Confidence
and Trust to
Walk**

**Reduce
Reliance on the
Car / Public
Transport**

‘Its benefits are wide reaching for visitors, residents and businesses covering public health, economy and the street environment.’



FINGER POSTS



MAP TOTEM POLES



MAP TOTEMS



PICTOGRAMS AND SYMBOLS



SHELTERS AND FURNITURE

Wayfinding

Today's Conditions

Downtown Lakewood currently lacks a consistent wayfinding system. There are signs that provide directional wayfinding in Belmar Park, there are signs near the Civic Plaza in Lakewood City Commons that indicate direction of services and there are new signs in Belmar highlighting the direction to particular retail or entertainment uses. However, for the average visitor, recognizable wayfinding for all area uses, along with easy-to-read mapping, is not present.



Participation

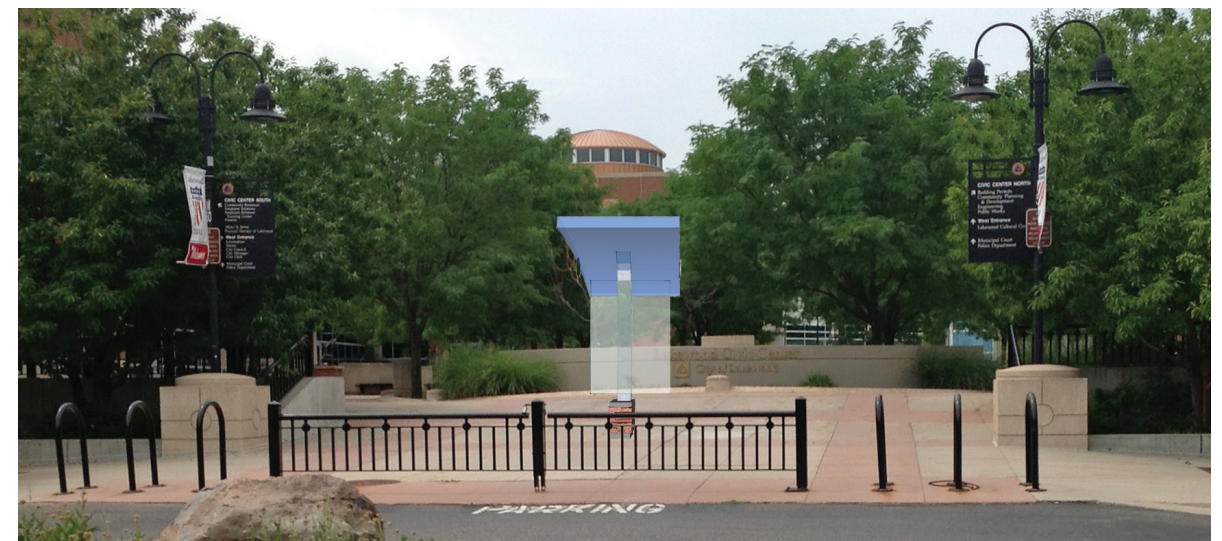
"Wayfinding signage would really promote walking around Downtown and make visitors aware of everything that's here"

Recommendations

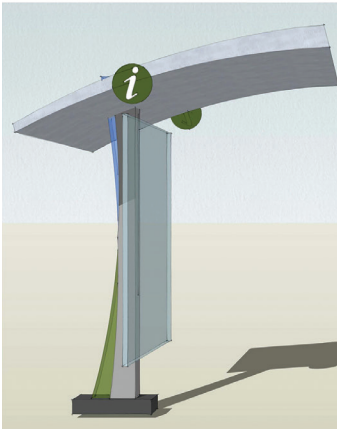
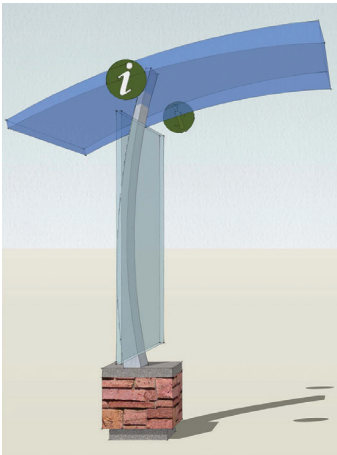
The wayfinding system for Downtown Lakewood is designed around the role of the three tiers of wayfinding signage. Pedestrian totems are placed at the edges of Downtown, along Pierce Street to the east, Belmar Park to the West and Alameda Avenue to the north to inform pedestrians of entry points to Downtown and direct them to nearby uses. Once inside the Downtown, whether by foot or vehicle, Information kiosks are located at primary destinations such as Transit Centers, the Heritage Center, and Belmar Library to provide a broader range of information with more inclusive mapping of area destinations and directions. Finger signs or posts are located throughout to ensure consistent directional information and recognizable Downtown identity to the pedestrian.

The proposed system uses walk time indicators on signage, instead of distance, to allow the user to understand the space and effectively plan a journey. It also encourages people to further explore an area if they understand its scale. Walking times can be communicated through a range of graphic treatments.

Today's smart phones and numerous mapping applications allow for easy address locating and wayfinding for most people. However, physical wayfinding signage, combined with identity markers throughout the Downtown, are a strong complement to any personal automated mapping programs and an essential part of creating a recognizable system for Downtown.

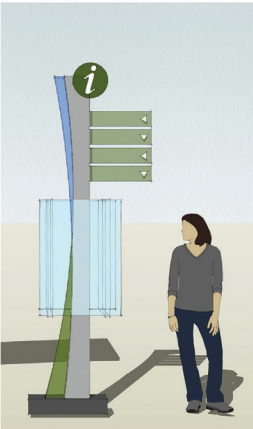
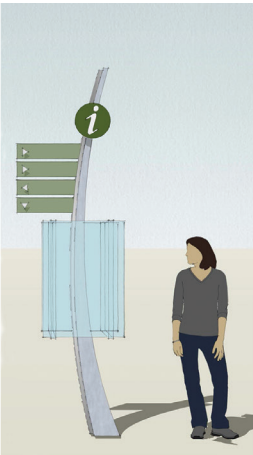


Informational Kiosks

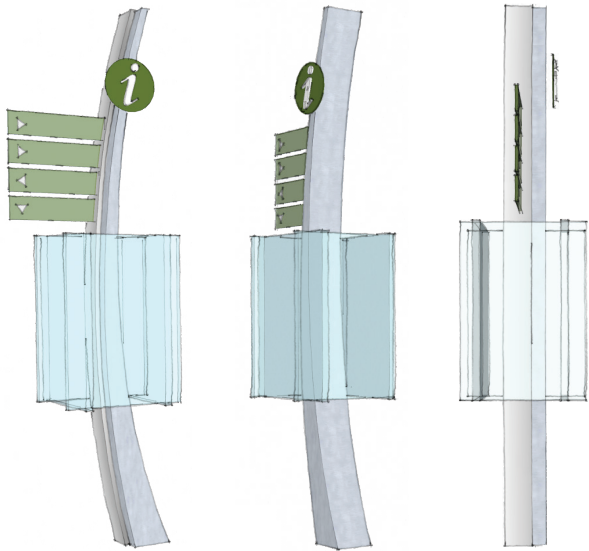
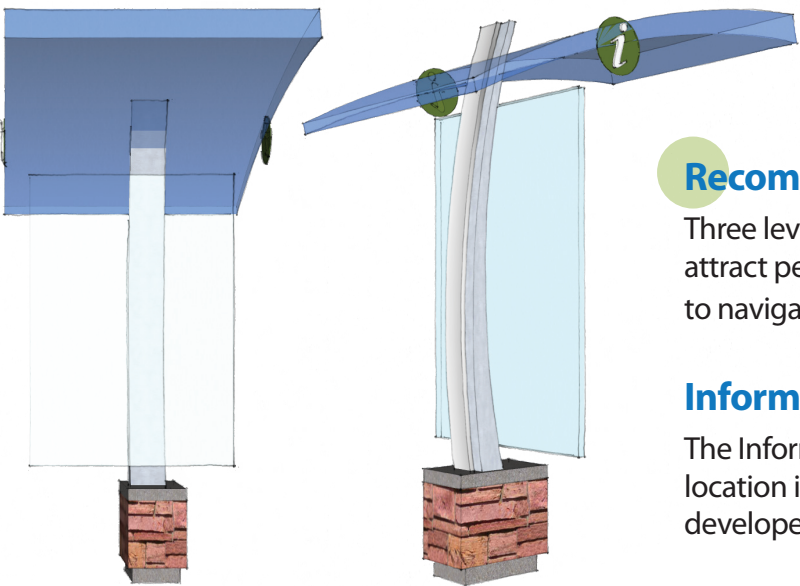
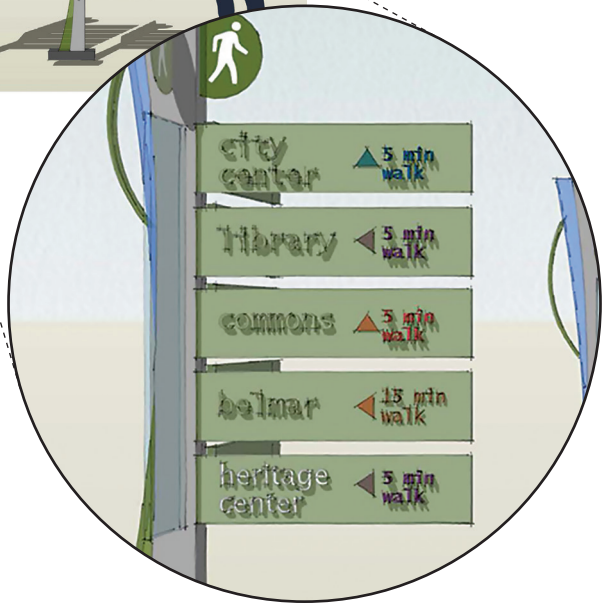
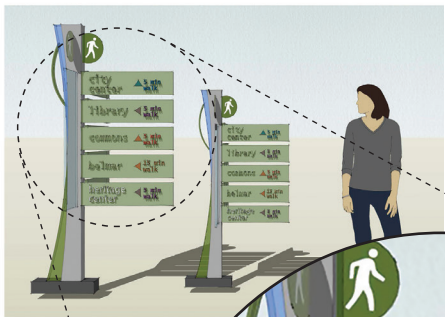
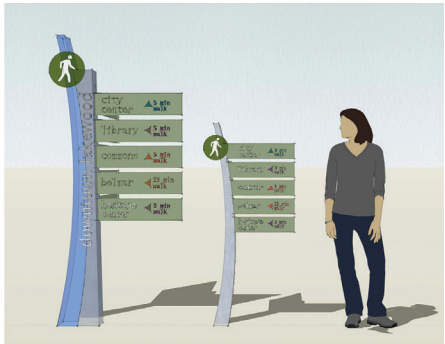


These concept drawings are not final designs, but indicate possible options for Wayfinding Signage in Downtown Lakewood.

Pedestrian Totems



Directional Finger Signs



Recommended Styles

Three levels of wayfinding signage are designed to attract pedestrians to downtown and make it easy to navigate between Downtown destinations:

Informational Kiosks

The Informational Kiosks include a map with a location identifier, branding, and other materials developed by the City as desired.

Pedestrian Totems

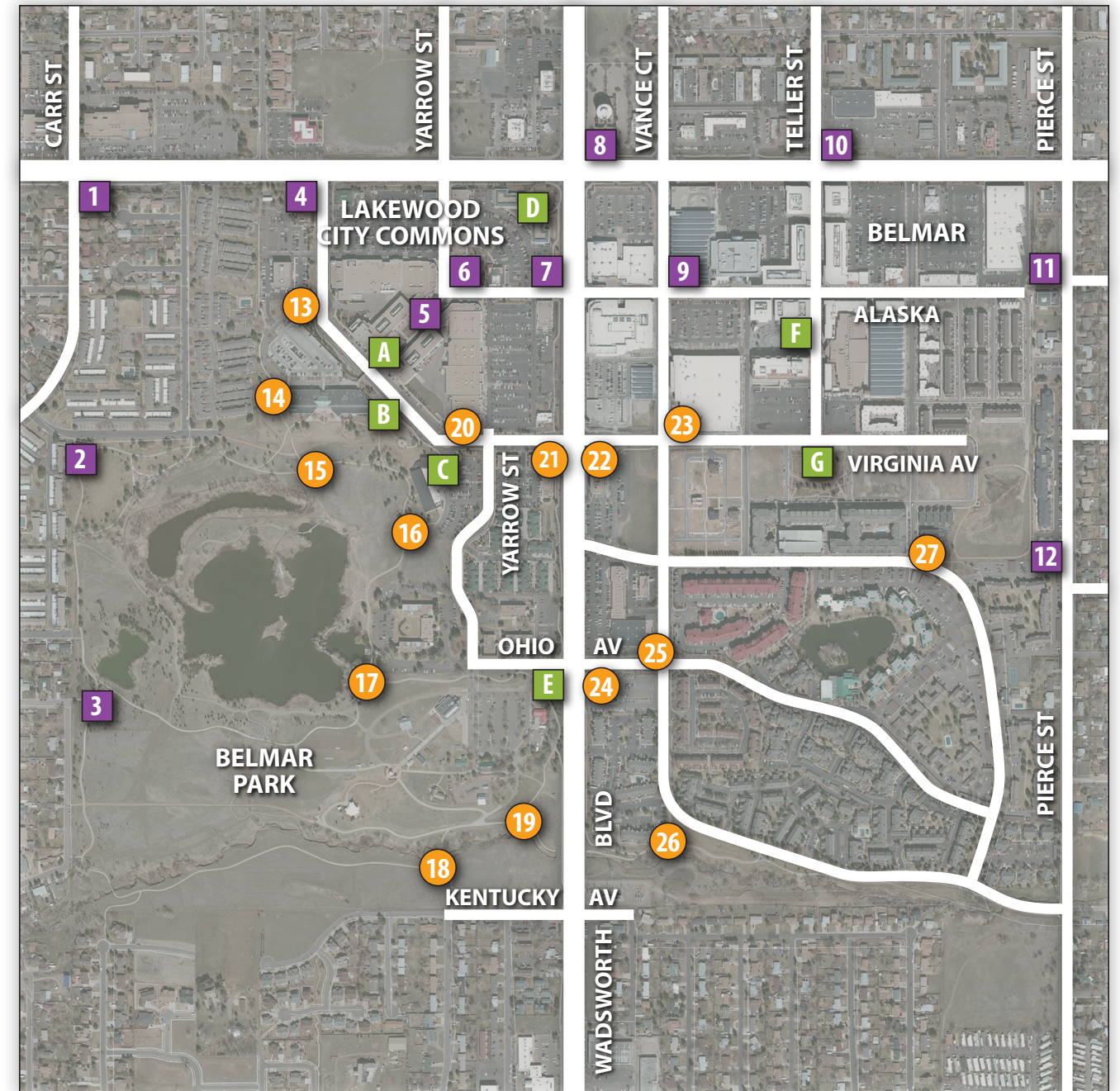
The Pedestrian Totems include a map with location identifier and branding.

Directional Finger Signs

The Directional Finger signs list multiple destinations but have no map.

Wayfinding Signage Details

Sign ID	Type	Destinations Listed
A	Kiosk	None
B	Kiosk	None
C	Kiosk	None
D	Kiosk	None
E	Kiosk	None
F	Kiosk	None
G	Kiosk	None
1	Totem	None
2	Totem	Belmar Park (at top with no arrow), Lakewood Commons, Heritage Center
3	Totem	Belmar Park (at top with no arrow), Lakewood Commons, Heritage Center
4	Totem	Cultural Center, City Hall, Police, Transit Center, Belmar Park
5	Totem	Cultural Center, City Hall, Police, Transit Center, Belmar Park
6	Totem	Cultural Center, City Hall, Police, Transit Center, Belmar Park
7	Totem	Cultural Center, City Hall, Police, Transit Center, Belmar Park
8	Totem	None
9	Totem	Entertainment District, Belmar Transit Center, Library, Heritage Center, Cultural Center, City Hall, Belmar Park
10	Totem	Entertainment District, Belmar Transit Center
11	Totem	None
12	Totem	None
13	Finger	Cultural Center, City Hall, Police, Transit Center, Belmar Park
14	Finger	Transit Center, Cultural Center, City Hall, Police, Heritage Center, Library, Lakewood Commons
15	Finger	Transit Center, Cultural Center, City Hall, Police, Heritage Center, Library, Lakewood Commons
16	Finger	Transit Center, Cultural Center, City Hall, Police, Heritage Center, Library, Lakewood Commons
17	Finger	Lakewood Commons, Heritage Center, Library
18	Finger	Lakewood Commons, Heritage Center, Library
19	Finger	Lakewood Commons, Heritage Center, Library
20	Finger	Lakewood Transit Center, Belmar Transit Center, Library, Heritage Center, Cultural Center, City Hall
21	Finger	Lakewood Transit Center, Belmar Transit Center, Library, Heritage Center, Cultural Center, City Hall, Belmar Park
22	Finger	Lakewood Transit Center, Belmar Transit Center, Library, Heritage Center, Cultural Center, City Hall, Belmar Park
23	Finger	Entertainment District, Lakewood Transit Center, Belmar Transit Center, Library, Heritage Center, Cultural Center, City Hall, Belmar Park
24	Finger	Belmar, Lakewood Commons, Heritage Center, Library
25	Finger	Belmar, Lakewood Commons, Heritage Center, Library
26	Finger	Belmar, Lakewood Commons, Belmar Park, Heritage Center, Library
27	Finger	Entertainment District, Belmar Transit Center, Lakewood Commons



Implementation

Wayfinding Signage	
Planning Level Cost Estimate:	\$300,000
Timeframe:	Near
Complexity:	Medium
Potential Project Lead:	City/Developer/BID

Notes and Phasing Opportunities: Installation locations will require coordination with property owners/managers, Community Resources, and Public Works. It is possible to implement high priority Kiosk locations prior to other sign locations.

Introduction

There is a growing demand for mobility options throughout Downtown Lakewood. Increasing residential development and intensification of retail, dining and entertainment uses, coupled with transit connections to regional light rail service, make for a vibrant and changing Downtown environment. Multi-modal connectivity options to and within Downtown are fundamental to increasing this activity and reducing reliance on the private automobile. This section discusses transit services, long-term transit opportunities for Wadsworth Boulevard and transit center improvements, along with opportunities for bicycle-share and car-share programs in Downtown.



Today's Conditions

Transit

With the opening of the W Line light rail service, RTD modified its bus service plan to provide more extensive and higher frequency bus service along Wadsworth Boulevard during the peak period commuter hours. Currently Wadsworth Boulevard Corridor service carries about 2000 passengers a day. They implemented call-n-Ride service that increased transit coverage throughout the Downtown area and flex-route service along Garrison Street from W. Jewel Avenue to the Garrison LRT Station during the peak period commuter hours. Additional transit service connections between the Wadsworth LRT Station and Belmar became available in the Spring of 2013 with the addition of the private Belmar Shuttle that transports passengers directly from the station to shopping and dining in Belmar.

The Downtown Lakewood Transit Center, located on Allison Parkway in Lakewood City Commons, is served by Routes 1, 3, 11, 14, 26 and 76 and there are roughly 1800 boarding and alightings per day at this location. The Transit Center is located below the Civic Center plaza and access from the Transit Center to Lakewood City Commons is by elevator located within the adjacent parking garage or staircases on Allison Parkway. Transit Center signage is minimal, there is no wayfinding signage in place. Connectivity to surrounding uses is not evident to pedestrians in Downtown Lakewood.



Belmar Transit Center



W Line Light Rail



RTD Call-n-Ride Bus



Belmar Shuttle

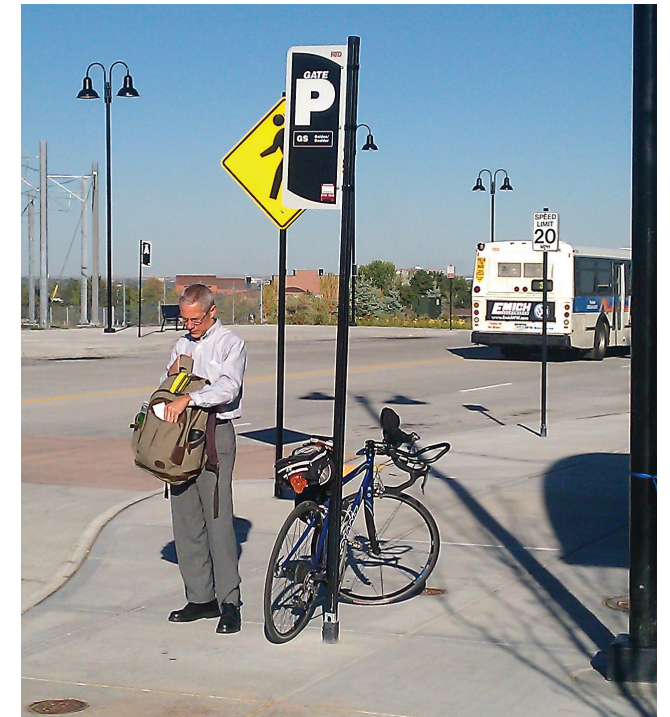


Access to Lakewood City Commons

The Belmar Transit Center is located in Belmar at Virginia Avenue and Teller Street and is adjacent to the area park. This location is served by Route 3 which provides a cross-town connection between Belmar and the Federal Center LRT Station. Signage at the Belmar Transit Center is limited to the RTD bus stop sign.

Bicycle

Cyclists in Downtown Lakewood encounter many of the same challenges as pedestrians crossing Wadsworth Boulevard and Alameda Avenue. Many residents utilize the Wadsworth underpass at Kentucky to bicycle to Belmar Park where paths provide connections to adjacent neighborhoods and Lakewood City Commons. Shared use paths and bicycle routes provide connection at the residential edges, along Pierce Street on the east side of Downtown and Carr Street and Alameda Avenue on the west side of Downtown. Biking along Wadsworth Boulevard is very difficult except along the sidewalks and direct bicycle connection to the Wadsworth LRT Station is not readily available. Bicycle lanes along Garrison and the Alameda Avenue path to Routt Street provide the best connections to the Garrison LRT station and the Federal Center LRT station. Bicycle parking and bicycle lockers are available at the Lakewood Downtown Transit Center.



Bicycle connectivity

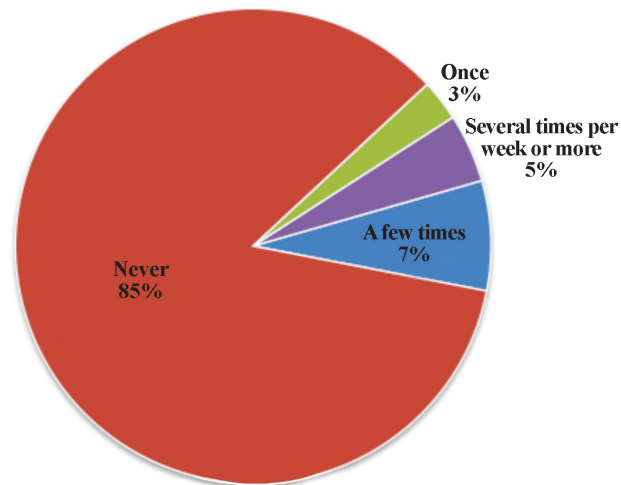


Bicycle Lockers

Participation

Web Questionnaire Results:

How often have you used transit to/from or around Downtown Lakewood in the last month?



What were the trip purposes of your transit trips?

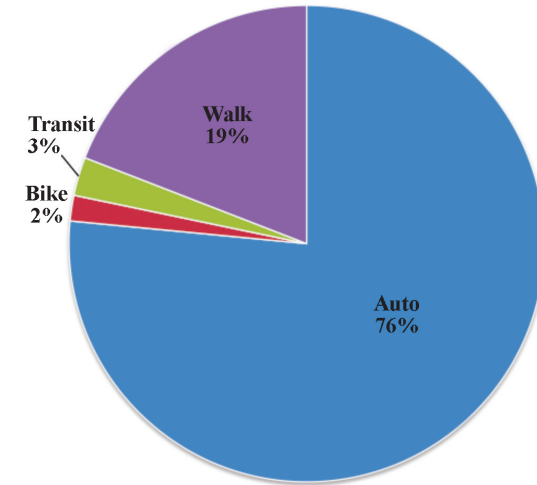
The top three highest combination percentages of responses are as follows:

- I did not use transit - 81%
- Commuting - 8%
- Shopping/Errands - 5%

Public Workshop attendees felt that transit service was hidden and not readily visible from shopping or retail areas within Downtown. The Downtown Transit Center should be opened up to Lakewood City Commons and surrounding uses and made more visible through signage.

“Better awareness of Belmar Park and more comfortable pedestrian and bicycle connections to the park are really important”

What mode did you use for the majority of your trips in the Downtown Lakewood area in the last month?



Transit Recommendations

Transit Centers

Access and visibility of the Downtown Transit Center are important to ensuring transit is a viable mobility option for Downtown residents, employees and visitors. It is recommended that stairway access be implemented adjacent to the transit shelter so that passengers recognize the easy connection to Lakewood City Commons retail and civic uses located one level up from the transit center. Stairway improvements should be accompanied by directional wayfinding signage at the stop.



Belmar Transit Center



It is also recommended that the existing elevator be replaced with a glass elevator in the style used by RTD at Lakewood LRT stations. The similar elevator style would visually link the Downtown Transit Center to LRT stations, increase awareness of the connection from the Transit Center to Lakewood City Commons and signage would direct passengers to nearby uses.

Elevator improvements from Lakewood City Commons plaza.



Similarly, signage improvements and enhancements to the Belmar Transit Center will make the transit service more visible and make connectivity to neighboring uses more evident.

Alternate Modes

Transit Service

Extensive bus and light rail service improvements were implemented by RTD in Spring of 2013 resulting in increased transit coverage and connectivity in Downtown Lakewood. Until these service changes can be evaluated for effectiveness, no further service changes are recommended as part of this study.

However, future options for a Downtown transit circulator were explored, as a means of supplementing RTD service in the area if needed.

Option A: A shorter, high frequency circular route serving the immediate Downtown area, linking residential uses to retail uses and the numerous bus routes running to the Wadsworth LRT station. This route would be designed to enhance connectivity in Downtown and encourage greater visitation to the area.

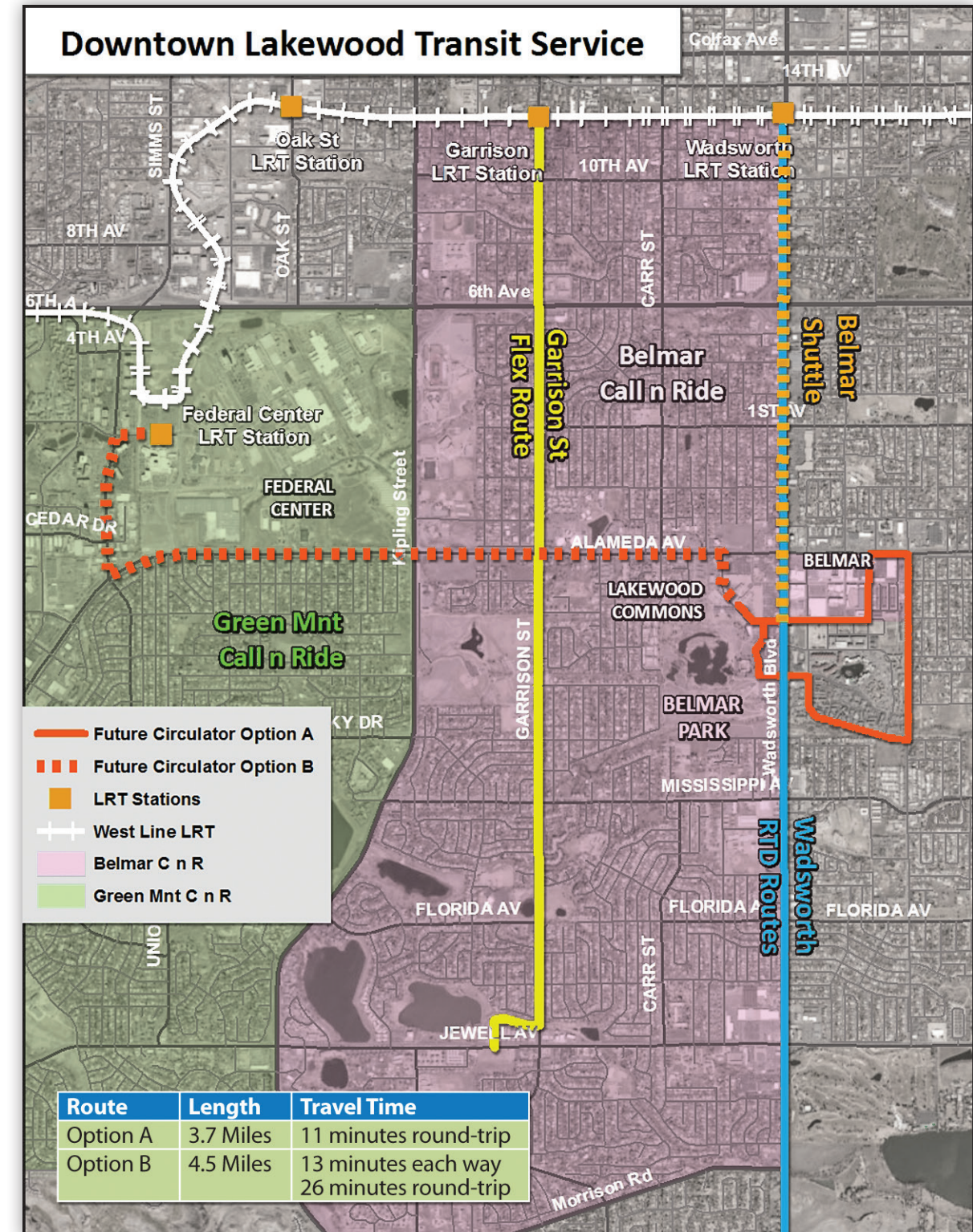
Option B: Routing from the Downtown Lakewood Transit Center along Alameda Avenue to the Federal Center Station covering a broader residential base, Kaiser Permanente, Colorado Christian University and St. Anthony Hospital. This routing could act independently or be combined with Option A to connect employment, campus, retail and entertainment uses with LRT.

Implementation

Lakewood Transit Center Improvements

Planning Level Capital Cost Estimate:	\$600,000 (Elevator Modifications) \$100,000 (Stairs)
Timeframe:	Medium
Complexity:	Medium
Potential Project Lead:	City/RTD

Notes and Phasing Opportunities: Coordinate with RTD on improvement opportunities and funding especially for elevator upgrades. Elevator and stairs can be implemented as separate projects. Wayfinding signage improvements can also be done separately and are included in the way finding signage package.



Wadsworth Corridor

Long-term transit technology considerations for Wadsworth Boulevard were also examined and discussed at public workshops. A comparison of different technologies that might someday operate in the 2 mile plus segment linking Downtown Lakewood, Wadsworth LRT station and Colfax Boulevard included Bus Rapid Transit, Streetcar and Urban Gondola.

Bus Rapid Transit



Bus Rapid Transit Vehicle

Bus Rapid Transit can operate within a separated guideway or operate with traffic on city streets with operational enhancements such as signal priority. Enhanced bus is typically considered a cost-effective solution. The estimated cost for implementation along Wadsworth Boulevard is between \$2-\$8 million.

Bus Rapid Transit	Description
Typical construction costs/mile	\$1-4 million (two-way service) depending on amenities
Typical maximum operating speeds	City street speeds
Typical distance between station/stops	¼-2 miles depending on application
Types of alignments/guideways	Shared roadway with operational enhancements
Typical vehicle length	40-70 feet
Typical passenger capacity/vehicle	60-80
Typical power source	Diesel, natural gas, or overhead electric
Example cities/systems in use	Tampa, Los Angeles

The most recent example of an enhanced bus system is the MetroRapid system in Tampa, Florida, operated by Hillsborough Area Regional Transit Authority (HART). That system is 17.5 miles long and is being constructed at a capital cost of approximately \$35 million (including 12 branded buses), for a cost per mile of approximately \$2 million. It includes 25 enhanced passenger stops along the corridor in both directions (or one approximately every 2,600-4,000 feet), with bicycle racks at every stop, real-time passenger information, and ticket vending machines at many stops. Service will operate in 2013 on 15-minute headways in each direction.



Enhanced Stations

Streetcar



Seattle Streetcar



Portland Streetcar

The modern streetcar runs with traffic and provides a high quality, high capacity link between origins and destinations within a dedicated guideway. The approximate cost for Streetcar implementation along Wadsworth Boulevard would be between \$60-\$120 million. Many cities are currently exploring this option:

- Salt Lake City Sugarhouse (1.75 two-way route miles, \$36.7 million, \$20 million/mile)
- Charlotte (1.5 miles, \$37 million capital cost or \$24 million/mile)
- Cincinnati (2.4 miles, \$84 million capital cost or \$34 million/mile)
- Los Angeles (2.37 miles, \$106 million, \$44 million/mile)
- Tucson (4.9 miles, \$196.8 million capital cost, \$50.8 million/mile)
- Kansas City (2 miles, \$100 million or \$51.2 million/mile)
- Austin Urban Rail (16.9 miles, \$955 million capital cost or \$56.6 million/two-way mile)

Streetcar	Description
Typical construction costs/mile	\$30-\$60 million/mile (two-way service) depending on amenities
Typical maximum operating speeds	45-55 mph
Typical distance between station/stops	¼ to ½ mile depending on application
Types of alignments/guideways	Shared roadway, semi-exclusive, or exclusive
Typical vehicle length	60-120 feet
Typical passenger capacity/vehicle	60-100
Typical power source	Typically overhead electric but could operate on battery power or ground-level power for short distances
Example cities/systems in use	Portland, Seattle, Tacoma

Transit Wadsworth Corridor

Urban Gondola

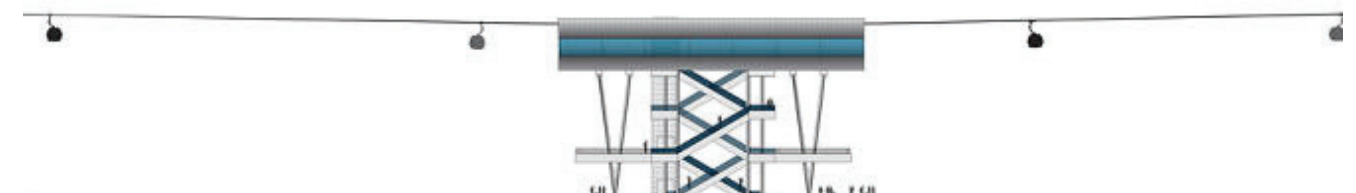
Urban gondola is being considered today by cities such as Austin, Texas, Seattle, Washington and Ogden, Utah as a means of transporting passengers along already busy and congested urban corridors. Urban gondola does not place the same demands for right-of-way within the arterial as streetcar or bus rapid transit and it does not complicate the vehicular carrying capacity of the facility. It is often viewed as a means of implementing additional corridor capacity within the existing streetscape.

Stations or stops can be elevated or designed at-grade for ease of pedestrian boarding or alighting along the corridor. They can even be incorporated into existing buildings or facilities with minimal right-of-way costs. The approximate cost for Urban Gondola along Wadsworth Boulevard would be between \$20 - \$100 million.



Urban Gondola	Description
Typical construction costs/mile	\$10-\$50 million per mile
Typical maximum operating speeds	5-20 mph
Typical distance between station/stops	1/4 – 1/2 mile
Types of alignments/guideways	Exclusive (all aerial)
Typical vehicle length	10-30 feet
Typical passenger capacity/vehicle	10-60 depending on car size
Typical power source	Electric power pulling cable
Example cities/systems in use	Ski resorts, Portland

Elevated Stops



Surface Stops



Depots



Frog Design, Inc. - Austin, Texas

Implementation

Further consideration of the feasibility of these corridor technologies for Wadsworth Boulevard should include consideration of the following:

- Work with corridor property and business owners to gauge community support for long-term transit solutions along Wadsworth Boulevard. Consider establishing a local assessment district that would identify corridor goals, support the next phase of study and provide funding basis for part of local match requirements.
- Conduct a higher-level feasibility study to determine costs, constructability and funding options. Through coordination with RTD and the local Federal Transit Administration office, a New Starts or Small Starts Project Development could be developed as well. Consultation with the local Federal Transit Administration office and RTD would be the next steps to evaluating study options.

Recommended Bicycle Facilities
and Bike Share Locations



Bicycle System Recommendations

The City of Lakewood should expand upon the existing bicycle facilities in the study area to enhance bicycle connectivity and to make bicycling options more visible to residents, employees, and visitors in the area. This should primarily be accomplished through the addition of on-street facilities consisting of bicycle lanes where space permits or bicycle shared lane markings or “sharrows” where there is not enough width to implement a bicycle lane.



In the Lakewood Commons area, the addition of on-street bicycle facilities on Yarrow Street and Allison Parkway would tie the residential and commercial areas together, provide better access to transit, and also connect to Belmar Park and the proposed enhanced bicycle crossing of Wadsworth Boulevard at Ohio Street.

In the Belmar area, on-street bicycle facilities should be added to connect the residential areas in the south, the Belmar Transit Center, the commercial area, and residential neighborhoods to the north. The addition of on-street facilities along Vance Street, Kentucky Avenue, Reed Court, and Center Avenue will connect residential and commercial areas and also connect to the proposed enhanced bicycle crossing of Wadsworth Boulevard at Ohio Street to improve bicycle connectivity to the Belmar Park and Lakewood City Commons area. Adding on-street bicycle facilities to Teller Street will connect neighborhoods to the north of Belmar to Belmar and adding bicycle facilities to Alaska Drive, Virginia Avenue, and Saulsbury Street as shown on the map will allow for efficient and attractive bicycle circulation options through Belmar. Once a pedestrian and bicycle connection is implemented across Wadsworth Boulevard at Alaska Drive, on street bicycle facilities along Alaska Drive should be extended to incorporate this connection.

There is also one additional off-street bicycle path recommended to be implemented between Pierce Street and Center Avenue slightly north of the Pierce Street and Jefferson Place Intersection. This is a key improvement to enhancing bicycle and pedestrian connectivity between Belmar and neighborhoods to the east.

Bicycle System Implementation

On-Street Bicycle Improvements (Kentucky/Vance/Center/Reed)	
Planning Level Capital Cost Estimate:	\$15,000 - \$45,000
Timeframe:	Near
Complexity:	Medium
Potential Project Lead:	City

Notes and Phasing Opportunities: Implement sharrows or bike lanes depending on available width and desired auto travel and parking lane configurations. Implementing bike lanes along Kentucky/Vance would require removing the existing two-way center left turn lane. Implementing bike lanes along Center/Reed may be feasible without removing parking but needs further study.

On-Street Bicycle Improvements (Allison/Yarrow)	
Planning Level Capital Cost Estimate:	\$10,000 - \$25,000
Timeframe:	Near
Complexity:	Medium
Potential Project Lead:	City

Notes and Phasing Opportunities: Implement bike lanes on Yarrow Street between Ohio Avenue and Virginia Avenue. Bike lanes could be implemented on Allison Parkway between Yarrow Street and the roundabout near King Soopers if the center left turn lane is removed. Otherwise implement sharrows in this section. Implementing sharrows on the Yarrow Street alignment in Lakewood City Commons will require coordination with the Lakewood City Commons ownership.

Bicycle System Recommendations

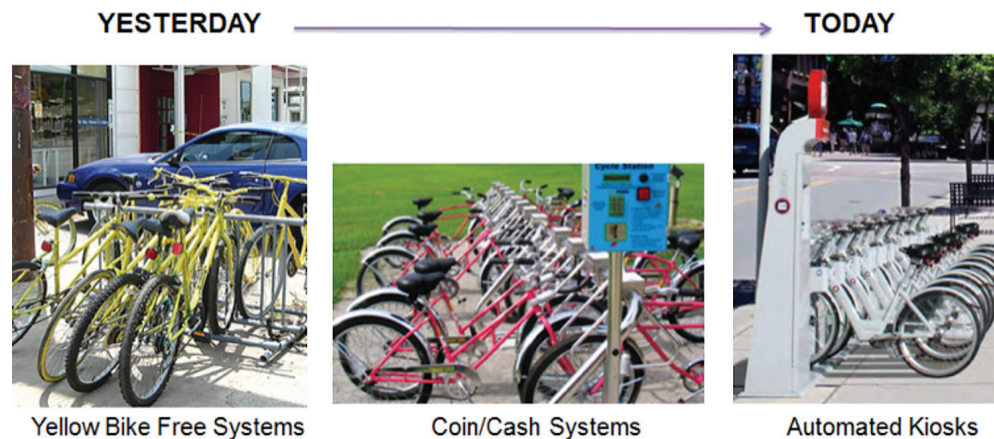
Bicycle System Implementation *(continued)*

On-Street Bicycle Improvements (Alaska, Virginia, Teller, Saulsbury)	
Planning Level Capital Cost Estimate:	\$20,000 - \$25,000
Timeframe:	Near
Complexity:	Medium
Potential Project Lead:	City

Notes and Phasing Opportunities: : Implement bike lanes or sharrows as space permits. The cost estimate above is based on an all "sharrow" implementation.

Bike Share Recommendations

Across the country bike share systems are becoming more and more popular. At first, bike-share programs consisted of free bikes around town, found in some towns and college campuses. (e.g., Madison, Austin). Today, bike share systems typically consist of sophisticated automated kiosks providing city-wide coverage, accountability and flexibility as well as ease of use. As of April 2013 there were around 535 bike-sharing programs around the world, made of an estimated fleet of 517,000 bicycles. In the U.S. there are approximately 33 systems running with many more in planning stages. These include existing bicycle sharing systems using the B-Cycle model at the Denver Federal Center and in the City and County of Denver.



Typical Bike-share System Characteristics

- Higher frequency shorter trips during week; longer trips / 24-hour rentals on weekend
- Enough stations to enable single trips with pick-up/drop-off capabilities to reduce auto trips
- Appeals to multiple markets: tourists / residents / commuters
- Multiple rental options: one hour, 24 hour, 30 day, annual
- Membership card or credit card enabled

Key Community Characteristics where Bike share has been successful:

- Higher concentration of land use mix and densities
- Higher population density
- Bike infrastructure and roadway conditions that enable cycling; many cities rates Silver or better
- Presence of a university population
- Strong local and regional transit linkages
- Suitable climate and topography for biking
- Community awareness and acceptance of alternative modes

Below is a chart comparing Lakewood with other cities with comparable cities that have successfully implemented bike share systems:

City Name	System Name	Population	Population Density	College Student Population
LAKEWOOD		142,980	3,465/sq mi	2000+
Boulder, CO	B-Cycle	97,385	3,884.1/sq mi	29,952
Spartanburg, SC	B-Cycle	145,058	2,066.3/sq mi	18,219
Chattanooga, TN	Alta Bikeshare	167,674	1,264/sq mi	26,000
Des Moines, IA	B-Cycle	203,433	2,515.5/sq mi	63,685
Madison, WS	B-Cycle	233,209	3,030/sq mi	40,433

It is recommended that the City of Lakewood move forward with developing further implementation plans for a bicycle sharing system in the Downtown area. Due to the potential synergies with the existing bicycle sharing systems in the region, the B-cycle system should be seriously considered. The City of Lakewood could implement a starter system of one to four kiosks around Downtown that could be expanded in the future once demand grows. Some potential locations are shown in the map. Funding would be derived through grants, gifts, donations, sponsorships, partnerships, membership fees, and use fees. Sponsorships and partnerships are a critically important piece of the funding picture for automated systems. The City of Lakewood should explore potential partnerships with partners such as the Alameda Community Gateway Association, Kaiser Permanente, Colorado Christian University, RTD and St. Anthony Hospital, among others.

The annual cost of operating and maintaining the first phase of the automated system with four stations is estimated to be approximately \$80,000. Initial startup costs for acquiring automated stations (4), bicycles, and other necessary system elements of approximately \$250,000.

Bike Share Implementation

Bike Share Program	
Planning Level Capital Cost Estimate:	\$250,000 Capital Cost \$80,000/yr O&M Cost
Timeframe:	Medium
Complexity:	Medium
Potential Project Lead:	City/future not for profit

Notes and Phasing Opportunities: Implementing a bike share scheme in Downtown requires choosing a system and finding locations that are both visible and where there is space to implement them. Potential coordination with Federal Center Bike Share System in place today. A starter system of one to four kiosks in the downtown area could be implemented initially to provide proof of concept.

Car share is a model of car rental where people are authorized to rent cars for short periods of time from various locations, often by the hour. They are attractive to customers who make only occasional use of a vehicle or are looking for the “last mile” connection to their destination. There are many providers of such services today. Zipcar offers over 11,000 vehicles throughout North America and Europe making it the world’s leading car sharing network provider; Car2go is available in 20 cities worldwide and most recently, E-Go car share has come to Denver.

Recommendations

The City of Lakewood should pursue the implementation of a car share program in Downtown Lakewood, linking the residential development in Belmar, the retail destinations in the area and the Wadsworth or Federal Center light rail stations. Car-share availability would strongly support the “last mile” connection to home or other destinations from transit and light rail stations in Lakewood.

There are two types of systems that should be considered for implementation:

Type 1 - The most well-known systems utilize a “home” based car-share program that requires designated stations, spaces or zones for accessing or parking system cars. The system that allows for “multi” homes lets users leave the cars at either end of their trip. Parking spaces for the system need to be within easily accessible, walkable locations that are highly visible. High-density residential and commercial locations work best to capture users all hours of the day.

Under such a system, it is recommended that Downtown Lakewood parking spaces or parking zones be designated in the Belmar parking facility across the street from the Belmar Transit Center, making the system accessible for transit users, bike-share system users and residents located nearby. The addition of car-share and bike-share adjacent to the Belmar Transit Center would make this a well-supported multi-modal hub. Additional car-share parking spaces or zones should be called out in Lakewood City Commons near the Civic Plaza, at the Belmar Library and at the Wadsworth and Federal Center LRT stations.

Type 2 - Another type of system becoming more popular today is a dispersed car-share model that uses a “home area”, such as the City boundaries for parking and returning system cars. Cars can be left anywhere in the home area as long as they are parked in an on-street parking space that is a legal non-restricted, metered or time limited space. Cars may be driven outside the home area, but they must be returned and parked in the home area. Cars can be reserved online or by using a smartphone app that will locate cars nearby. Under such a system, the City of Lakewood would need to examine the parking rules and regulations that would support the implementation of such a system.



Car2Go system was recently implemented in Denver and the City of Denver passed new car share parking regulations to support the implementation.

Car Share Implementation

Car Share Program	
Planning Level Captial Cost Estimate:	\$N/A
Timeframe:	Medium
Complexity:	Low
Potential Project Lead:	City/private sector

Notes and Phasing Opportunities: Implementations can be as simple as designating a few parking spaces as car share parking only or could be more significant such as developing a car share hub.



E-go car-share system designates and marks parking spaces.

Lakewood Downtown Connectivity Plan Implementation Details

10/25/13

Project Name	Project Description	Timeframe	Complexity	Planning Level Capital Cost* (2013)	Planning Level O & M Cost* (2013)	Potential Funding Source	Potential Project Lead	Phasing Opportunities	Notes
Alameda/Yarrow	Median modifications to open up a westbound left turn and restrict southbound left turn	Near	Low	\$ 210,000	No additional	Lakewood	City/Developer		This project will relieve congestion at the Alameda/Allison intersection and improve operations at the King Soopers entrance.
Alaska (Nevada)/Pierce Pedestrian Connection	Urban design and signage improvements to better identify the existing connection as open to the public and as a gateway to Belmar.	Near	Low	\$ 50,000	\$ 5,000	Belmar/BID	Developer		Work with Belmar and Young Americans Center for Financial Education to secure permission to install and to finalize the implementation elements and locations. There may be an existing easement for the sidewalk but if not, one would need to be negotiated.
Wadsworth Underpass Lighting	Add lighting to the approaches to the underpass of Wadsworth south of Ohio	Near	Low	\$ 20,000	\$ 10,000	Lakewood	City		
Alameda east of Wadsworth	Includes widened median, removal of westbound left turn lane at Teller St., implementation of westbound double left turn lanes at Saulsbury St., and an enhanced pedestrian crossing at Teller St.	Near	Medium	\$ 5,000,000	\$ 10,000	Belmar	City/Developer BID	Hard to phase due to significant lane shift to the south	The key element for pedestrian connectivity is the enhanced pedestrian crossing at Teller St. which is critical to connecting the neighborhoods north of Belmar to Belmar.
Jefferson/Pierce Pedestrian Connection	Create hard surface pedestrian connection between Pierce and the Belmar area just north of Jefferson Pl. Hard surface connection should continue to Center Ave.	Near	Medium	\$ 55,000	\$ 5,000	Lakewood	City/Developer		An easement would need to be negotiated for the connection through south end of the Altria Inn at Lakewood property to connect Pierce St. with the existing trail around the detention pond.
Wayfinding Signage	Comprehensive wayfinding signage package focused on pedestrian/bicyclist needs	Near	Medium	\$ 300,000	\$ 30,000	Lakewood/BID	City/BID	Could implement high priority Kiosk locations prior to other sign locations	Installation locations will require coordination with property owners/managers, Parks, and Public Works
Gateway Monument and Marker Signage	Large format identifiers to let travelers know they are in Downtown and to reinforce Downtown's identity	Near	Medium	\$ 900,000	\$ 45,000	Lakewood/BID	City/BID	Can implement gateway monuments prior to other marker signage	Installation locations will require coordination with property owners/managers, Parks, and Public Works
Add Bike Lanes and/or Sharrows to Kentucky/Vance/ Center/ Reed	Implement sharrows or bike lanes depending on available width and desired auto travel and parking lane configurations	Near	Medium	\$15,000 to \$45,000	\$ 5,000	Lakewood	City		Implementing bike lanes along Kentucky/Vance would require removing existing two-way center left turn lane. Implementing bike lanes along Center/Reed may be feasible without removing parking but needs further study.
Wadsworth/Virginia	Intersection improvements to facilitate pedestrian movements. These include the construction of right turn channelizing islands, curb line modifications, raised pedestrian crossings of the channelized right turn lanes, and median modifications on the west side and south side of the intersection.	Near (Initial Phase) Long (Final Phase)	High	\$ 1,700,000	\$ 15,000	TIP/Lakewood	City	Full implementation of this project requires the Yarrow/Virginia median modifications to be made. Also, the south median modifications depend on a northbound left turn lane being opened at Alaska. However the northwest and southeast corners can be modified independently of other improvements.	This project is very important to improving pedestrian connectivity between Lakewood Commons and Belmar and also the Lakewood Transit Center and the multi-family housing east and south of the intersection. Changes to the intersection require CDOT coordination and approval. Full implementation also requires coordination with Lakewood Commons to relocate existing commercial signage in the west median. Property owners on the southeast corner may also be impacted. Coordinate with West Metro Fire on raised pedestrian crossing acceptability.
Car Share Program	Add a car share program to Downtown	Medium	Low	NA	NA	NA	City/Private Sector	Can start simple by providing some parking spaces that are dedicated to existing car share users	This can be as simple as designating a few parking spaces as car share parking only or could be more significant such as developing a car share hub
Lakewood Transit Center Improvements	Improvements are intended to connect the transit center along Allison Pkwy more easily and visibly to the City buildings and Lakewood Commons. Improvements include modifying the elevator to match the elevator styles being used on West Corridor and adding stairs on the west side of the transit center as well as improved wayfinding signage off of Allison Parkway.	Medium	Medium	\$ 700,000	no additional	Lakewood	City/RTD	Can do elevator and stairs as separate projects. Wayfinding signage improvements can also be done separately and are included in the wayfinding signage package	Coordinate with RTD on improvement opportunities and funding especially for elevator upgrades. Stairs alone would cost approximately \$100,000.
Bike Share Program	Add bike share locations to the Downtown area	Medium	Medium	\$250,000 Capital Cost	\$ 80,000	Grant/ Advertising/ Donation	City/future not for profit organization	A starter system of one to four kiosks in the downtown area could be implemented initially to provide proof of concept.	Implementing a bike share scheme in Downtown requires choosing a system and finding locations that are both visible and where there is space to implement them. Potential coordination with Federal Center Bike Share System in place today. The planning level cost shown is the capital cost only.
Ohio/Wadsworth	The proposed improvements are primarily focused on making bicycle improvements along Ohio to facilitate bicycle movements between the multi-family housing on the east and Belmar Park/ Lakewood Commons on the west. They include curb line modifications on the north side of Ohio, and the addition of bicycle lanes along Ohio.	Medium	Medium	\$ 490,000	\$ 2,000	TIP/Lakewood	City	Initial improvements could include a striping bike lanes from Wadsworth to Yarrow and an eastbound bike lane from Wadsworth to Kentucky.	Implementing this project depends on implementing bike lanes/sharrows along Vance/ Kentucky/ Center/ and Reed to form a complete bicycle system connection between the multi-family housing on the east and Belmar Park / Lakewood Commons on the west
Wadsworth Median between Ohio and Virginia	Adding a median along Wadsworth in this location provides landscaping and urban design opportunities.	Long	Medium	\$ 460,000	\$ 15,000	Lakewood/CDOT	City		Adding a raised median in this location will not affect any existing access locations but will still require CDOT approval. Maintenance responsibility and funding source would need to be identified.
Virginia/Yarrow	The proposed improvements are intended to improve both vehicular and pedestrian operations and safety at the intersection. They include narrowing the existing east median and removing the dense vegetation, relocating the south curb line to the north to remove one eastbound travel lane and reduce the pedestrian crossing distance, and adding a westbound right turn channelizing island.	Long	High	\$ 530,000	no additional	Lakewood	City/Developer	Full implementation of this project requires median modifications at the Virginia/Wadsworth intersection as well. A good first step would be to remove the dense vegetation from the east median to improve sight distance. Improvements shown to the northeast corner can also be completed independently of other improvements shown.	Improvements to the northeast corner require coordination and approval from Lakewood Commons.
Alaska/Wadsworth	There are two potential options for creating a pedestrian connection between Belmar and Lakewood at this location, one is at grade with a signal and one is an underpass. Both options include changes to vehicular access and circulation.	Long	High	\$810,000 at-grade, \$3-5M underpass	\$6,000 for traffic signal. \$15,000 for underpass	TIP	City/Developers	Initial improvements could include opening up the northbound left turn to allow vehicles accessing Lakewood Commons to use both Virginia and Alaska to do so. This would reduce northbound left turning volume at the Virginia/Wadsworth intersection and improve operations.	The feasibility of both the at-grade and underpass options require significant changes to land use in Lakewood Commons to provide for more density and higher pedestrian activity levels. A signalized at grade option does not currently meet traffic signal warrants and the location may be problematic for Wadsworth traffic operations. Any at-grade modifications would require CDOT approval.

* Details of streetscape and urban design costs and all other cost items are included in the technical appendix. **Cost estimates do not include ROW acquisition if required.** O & M costs for signing include life cycle replacement and vandalism repair.