East Yale Avenue Corridor Study
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EXECUTIVE SUMMARY

Introduction

The East Yale Avenue corridor will serve neighborhoods and connect people, places, and services through a safe and efficient transportation network.

The East Yale Avenue Corridor Study (Study) is a planning process led by the City and County of Denver (City) to engage residents and businesses throughout the corridor and develop a plan for East Yale Avenue between Downing Street on the west and the High Line Canal crossing at Yale west of Holly Street on the east, as shown in Figure 3.

The Study traverses six of Denver’s 78 city neighborhoods, including University Park, Wellshire, University, University Hills, Hampden, and Goldsmith. Only one of these neighborhoods, University Park, has an official neighborhood plan (completed in 2008, available here). Several plans have been completed that support these neighborhoods, including:

- Colorado Boulevard Plan (1991)
- Yale Station Area Study (2003)
- Colorado Station Area Framework Plan (2003)
- Yale Corridor Traffic Study (2014)

None of these previous planning efforts have focused on developing a multimodal, safe, and community-driven solution for East Yale Avenue.

Process and Goals

The project team, in coordination with City staff and the project Stakeholder Working Group (SWG), examined the existing conditions, past and adjacent studies, opportunities and constraints, and coordinated with the various jurisdictions and municipalities present along the corridor. Through several months of meeting with stakeholders and two public open houses (held virtually due to COVID-19 safety considerations), three overarching Study goals were developed that helped shape the Study’s vision and guided the eventual development of recommendations. These goals are:

1. **Safety**: Create an environment where everyone feels they can move safely, no matter their mode of travel, and prevent serious injuries and fatalities through corridor-wide infrastructure improvements (including adjacent trails and streets).

2. **Building Connections**: Create safe and convenient connections and improve access along the East Yale Avenue corridor where people can easily get to where they want to go.

3. **Multimodal**: Create an equitable and connected multimodal network to move more people by walking, biking, and taking transit as part of their everyday lives.
Key Recommendations

The Study included a comprehensive alternatives analysis effort to identify, evaluate, and prioritize 35 recommendations that were developed through input from previous planning efforts, the Study stakeholder working group, public open houses, input from residents along corridor. Further information regarding these recommendations, including key implementation strategies and potential funding sources are detailed in this Study.

<table>
<thead>
<tr>
<th>RANK</th>
<th>RECOMMENDATION/PROJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shared use path on Yale from Colorado Boulevard to the High Line Canal</td>
</tr>
<tr>
<td>2</td>
<td>Repair/widen sidewalks along East Yale Avenue (Figure X)</td>
</tr>
<tr>
<td>3</td>
<td>Bike/ped crossing safety improvements at the Yale &amp; I-25 interchange</td>
</tr>
<tr>
<td>4</td>
<td>Upgrade the existing bike lane on Yale to a protected bike lane and extend the facility west to Downing Street</td>
</tr>
<tr>
<td>5</td>
<td>Install leading pedestrian indicator (LPI)/bike detection technology at Amherst Avenue and Colorado Boulevard</td>
</tr>
<tr>
<td>6</td>
<td>Enhance bike/ped crossing at Yale &amp; Franklin Street</td>
</tr>
</tbody>
</table>
INTRODUCTION TO THE EAST
YALE AVENUE CORRIDOR

Context and Project History

East Yale Avenue is a very diverse corridor, serving as a vital link between historic neighborhoods, north-south travel thoroughfares, RTD bus and light rail corridors, and bicycle and pedestrian networks. That link, however, boasts significantly different characteristics throughout its 2.5-mile span. West of Colorado Boulevard to Downing Street, Yale is a two-lane road (one each direction) through a stable residential area. The western project limit at Downing Street hosts connections to both the RTD Route 12 and more than 3,300 jobs at Porter Adventist Hospital, Swedish Medical Center, and Craig Hospital. East of Colorado to the High Line Canal (west of Holly Street), Yale varies from a five- to seven-lane cross-section supporting a wide variety of land uses including commercial centers, residential, transit-oriented develop, and access to I-25 and the High Line Canal.

Even though the halves of the corridor are different, the East Yale Avenue Multimodal Corridor Study became the perfect opportunity to create a package of context-sensitive projects to support a cohesive vision that puts people first.

Previous Studies

Yale Corridor Traffic Study (2014)

The only recent study that evaluated any segment of the Yale Avenue corridor, The Yale Corridor Traffic Study (January 2014) was a cooperative multimodal technical study between the City and County of Denver and Arapahoe County. It evaluated East Yale Avenue from Fairfax Street (Denver) on the west to Syracuse Way (Arapahoe County) on the east. The study looked to, among other goals, identify necessary improvements on East Yale Avenue to accommodate all modes of transportation efficiently and safely.

The study’s final recommendations were presented in six primary categories, including:

1. SIDEWALK IMPROVEMENTS

Identified improvements included sub-standard sidewalk widths (often less than three feet), missing ADA ramps, sidewalk obstructions (i.e. power poles, streetlights), missing sidewalk segments, and missing connections to RTD stops.

2. TRAFFIC OPERATIONS

These recommendations included queueing capacity improvements to various segments of the Yale Avenue interchange at I-25, turn lane improvements at Yale Avenue and Holly Street, and a westbound dedicated turn arrow at Monaco Parkway.

3. STREET RECONSTRUCTION

Capital-intensive improvements to the roadway cross-sections enabling multimodal travel improvements promoting safety and efficiency were identified throughout the study area.

4. TRAIL AND PEDESTRIAN CROSSINGS

Movement across East Yale Avenue, particularly throughout the eastern segments of the corridor, can be dangerous due to both traffic volumes and speeds. These factors are particularly troublesome near high-volume crossing locations such as at Yale Station and the High Line Canal. The study identified other study opportunities (now complete) to improve crossings at these locations in addition at the High Line Canal east of Monaco Parkway.

5. BUS STOPS

These recommendations included minor improvements at select locations along the corridor to introduce or enhance transit access.
6. OPERATIONS AND MAINTENANCE

Recommendations included signal timing modifications to improve pedestrian safety in addition to traffic enforcement and the prevalence of cut-through traffic.

Strategic Transportation Plan (2008)

The Denver Strategic Transportation Plan recognizes the importance of moving people, not just vehicles with the goal of creating a multimodal transportation system to support a viable, connected, and sustainable city. Recommendations related to improvements along East Yale Avenue were included in the 2008 report, including pedestrian improvements to connect Yale Station from High Line Canal to the west and East Yale Way at Colorado Boulevard intersection turn-lane improvements.

Mayor’s Mobility Action Plan (2017)

The Mayor’s Mobility Action Plan identified actions to reduce single-occupant vehicle mode share, eliminate traffic fatalities and serious injuries, reduce greenhouse gas emissions, and increase access to technologies and mobility for everyone, regardless of location of socioeconomic status.

Denver Moves: Bicycles

*Denver Moves: Bicycles* proposes on-street bikeways crossing East Yale Avenue on Franklin Street, St. Paul Street, and Dahlia Street. The plan also calls for the extension of the East Harvard Gulch Trail east of Colorado Boulevard from its current terminus at Jackson Street and the study of a reinforced multimodal connection from Dahlia Street east to the High Line Canal.

Denver Moves: Pedestrians & Trails

*Denver Moves: Pedestrians & Trails* proposed several recommendations for pedestrian infrastructure improvements in the Study area, including:

- An at-grade crossing of the East Harvard Gulch Trail at University Boulevard (about 500 feet north of East Yale Avenue) to provide a high-quality user experience rather than traveling 850 feet out-of-direction to comfortably and safely cross University Boulevard.
- A 300-foot trail to connect the East Harvard Gulch Trail to Colorado Boulevard from its current terminus at Jackson Street. This pathway would formalize an existing pathway through Schlessman Family YMCA’s parking lot.
- An improved crossing of the High Line Canal across East Yale Avenue just west of Holly Street. While this improvement is not evaluated or otherwise defined as part of this Study, it’s importance to the community and the desire to see it improved is well documented. Improvements to this crossing are funded through the Elevate Denver bond program. This crossing is also identified as a Phase 2 High-Priority Bikeway improvement in *Denver Moves: Pedestrians & Trails.*
Denver Moves: Transit identified Colorado Boulevard as a High-Capacity Transit (HCT) Corridor and University Boulevard as a Medium-Capacity Transit (MCT) Corridor.

- High-capacity transit (HCT) corridors are identified as those corridors with high levels of passenger capacity, very frequent services, and high-quality design that would benefit from improvements such as enhanced stops and easier access to stations. Other features of HCT corridors include improved service frequency, dedicated transit-only lanes, major streetscape changes, transit vehicles with special branding.

- Medium-capacity transit (MCT) corridors have elements that help to move buses through traffic in key locations as well as improved stops and pedestrian and bicycle connections. Other features of MCT corridors include improved service frequency, queue jumps or bypass lanes, transit vehicles with special branding, and upgraded connections to stops and stations.

FIGURE 5 - TRAFFIC ON YALE AT DAHLIA STREET
Vision and Goals

The ultimate vision for East Yale Avenue will incorporate a multitude of multimodal transportation infrastructure elements to enable safe and efficient travel along – and across – Yale between Downing and the High Line Canal. There has not been a concerted effort in the past to address multimodal needs along the corridor.

Prioritizing safe travel, regardless of mode, presents the opportunity to introduce best practices to transportation infrastructure elements of the corridor that the public and project team have identified as needing attention. The Yale corridor has different characteristics dependent upon the location throughout the corridor. The corridor is nearly exclusively residential with lower traffic volumes and speeds to the west while it has mixed land uses, higher speeds, traffic volumes, and accident rates to the east. No one single solution will improve safety throughout a corridor with multiple characteristics such as Yale. The Study has identified a variety of safety improvements at locations throughout the corridor which, if implemented, will enable safer movements along and across Yale.

Enabling efficient travel – regardless of transportation mode – throughout the Study corridor is important to ensure that Yale is for everyone, not just vehicles. Multimodal travel presents opportunities for improved health, air quality, and general quality of life. The recommendations developed through the Study address infrastructure gaps, signal timing, and other elements that provide for a truly multimodal transportation corridor without prioritizing one mode over any other.

Three overarching goals were created to guide identification and analysis of the Study’s eventual recommendations. They focused on safety throughout the Study area, building connections, and reinforcing the area’s multimodal network.

Safety

Create an environment where everyone feels they can move safely, no matter their mode of travel, and prevent serious injuries and fatalities through corridor-wide infrastructure improvements (including adjacent trails and streets).

Transportation safety has become a pervasive issue throughout the Denver metro area as roads have become busier and speeds have increased. Years of automobile-dominated growth has resulted in a corridor with wide travel lanes, high traffic volumes, substandard on-street bike facilities, and narrow sidewalks. There are opportunities throughout the Study area to improve safety for the traveling public – regardless of mode – and help move towards the City’s ambitious goal established through the Vision Zero Program of eliminating traffic-related deaths and serious injuries by 2030.

Building Connections

Create safe and convenient connections and improve access along the East Yale Avenue corridor where people can easily get to where they want to go.

From McWilliams Park and Yale Station to St. Anne’s School and the Schlessman YMCA, there are numerous community destinations throughout the Study area. Building safe, accessible connections to those assets will help ensure that residents and visitors alike can easily find and access these places.
Multimodal

Create an equitable and connected multimodal network to move more people by walking, biking, and taking transit as part of their everyday lives.

The Study area has numerous multimodal transportation options (current and planned), but few links between them. By working to effectively link these options (i.e. East Harvard Gulch Trail, High Line Canal, RTD transit service, future bike lanes on Franklin, St. Paul, and Dahlia Streets), residents and visitors will have a safe, efficient, and viable alternative to driving. This is by no means intended to place preference upon one transportation mode. It is, however, intended to provide a reasonable option to those who want it.
Public Process and Involvement

COVID-19 posed a unique challenge for the project team to gather public input from stakeholders. However, the project team was able to virtually engage with hundreds of residents and stakeholders to gather input, opinions, and concurrence. The project team held five virtual SWG meetings and two virtual public open houses.

Stakeholder Working Group

Stakeholder Working Group (SWG) meetings engaged a smaller, more targeted group who served as ambassadors for their community. Having a more intimate group allowed for open discussions and engagement, which led to the development of a comprehensive vision for future improvements throughout the Study area. The project team collaborated with the SWG to define the Study’s vision, goals, and focus areas and to help identify recommendations. Key issues and concerns were also used to help guide the Study’s planning and outreach efforts. Figure 7 below provides further details about the SWG. Appendix B provides SWG meeting summaries.

Virtual Open Houses

The Study’s first open house was held in April 2020 to introduce the project, gather feedback from the public about the Study area, solicit their opinions and concerns, and share findings from the Study’s existing conditions analysis. The Study’s second open house was held in September 2020 and served to review the vision and goal statements and demonstrate how to use a virtual interactive map to solicit input on the Study’s draft recommendations.

During these open houses, input from the general public was solicited through interactive polling questions, a live chat feature, Q&A sessions integrated into the presentations, and e-mails sent to the project team. The project email, established by the City, received more than 60 comments and questions. Summaries of the Stakeholder Working Group and Virtual Open Houses are included in the appendix. Figures 8 and 9 provide additional details about the virtual open houses. Appendix C provides virtual public open house meeting summaries.

FIGURE 7 - STAKEHOLDER WORKING GROUP MEETING STATISTICS

<table>
<thead>
<tr>
<th>5</th>
<th>20</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>stakeholder working group meetings</td>
<td>average number of total attendees</td>
<td>pre- and post-SWG surveys</td>
</tr>
</tbody>
</table>

FIGURE 8 - VIRTUAL OPEN HOUSE STATISTICS

<table>
<thead>
<tr>
<th>2</th>
<th>70</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>open houses</td>
<td>average number of total attendees</td>
<td>interactive polling questions asked</td>
</tr>
</tbody>
</table>

Elected Officials

Representatives from Denver City Council Districts 4 and 6 were integral to the success of the Study. Councilwoman Kendra Black (District 4) and Councilman Paul Kashmann (District 6), as well as council staff, helped coordinate focused updates to constituents through their respective newsletters. These included general project updates, presentations, and other general information about the Study.
Interactive Map

COVID-19 forced the project team to pivot away from traditional public feedback collection efforts to ensure safety for the project team and the community throughout the Study area. In lieu of these in-person touchpoints, an interactive map detailing the projects draft recommendations was developed. The map empowered stakeholders and residents to review the specifics regarding the recommendations, provide a rating (like/dislike), and leave general comments.

Additional information about the map and how it was publicized are included in Figures 10 and 11. A screenshot of the interactive map is included in Figure 12.

The interactive map received 152 public comments, 100 likes, and 17 dislikes. Overall, those who utilized the interactive map were supportive of the Study’s recommendations.
FIGURE 12 - YALE AVENUE INTERACTIVE MAP
RECOMMENDATIONS FOR EAST YALE AVENUE

Recommendations Development and Screening

The recommendations developed as part of the Study were created through a variety of efforts, including:

- Review of previously completed City and County of Denver plans, including those detailed on Page 4;
- Five Study Stakeholder Working Group and two virtual public open house meetings;
- Input through the Study’s web-based interactive map;
- Public input through the Study’s e-mail address; and
- Existing conditions analysis.

The alternatives development and evaluation process integrated public and stakeholder input at each step of the process, including:

- Establishing the goals and guiding principles for the Study;
- Incorporating previous Study recommendations and stakeholder suggestions to compile and examine a broad range of alternatives;
- Establishing evaluation criteria to screen the alternatives; and
- Alternatives refinement and prioritization.

Three base assumptions were developed early in the project to further guide the development of multimodal recommendations and alternatives, essentially serving as an initial screening. These assumptions were:

1. Right-of-way (ROW) acquisitions will not occur along or adjacent to the corridor;
2. In accordance with complete streets ideology and direction, which the City has adopted, there will be no additional vehicle capacity or lane miles added along the corridor; and
3. Alternatives that move forward into conceptual engineering will evaluate drainage to ensure the design will not further degrade existing deficiencies along the corridor. However, corridor-wide drainage improvements will be addressed by other capital improvement projects. Drainage improvements throughout this area have been identified as part of the 2019 Storm Drainage Master Plan.

As a result of these efforts and thanks to the participation of residents and stakeholders along the corridor, 35 alternatives were identified for analysis and further study. These were screened based upon a variety of quantitative and qualitative measures.

Detailed information related to the screening of the recommendations presented in this Study can be found in the Alternatives Analysis Technical Memorandum, included in Appendix D.

FIGURE 13 - CROSSWALK AND PEDESTRIAN REFUGE AT YALE AND COLORADO BOULEVARD
Use of Previous Planned/Identified and/or Funded Projects

The Study thoroughly reviewed recommended multimodal improvements that impact movements on the East Yale Corridor from previous studies as well as those multimodal improvement projects that are in the process of obtaining, or have obtained, funding to move forward into construction and implementation. While these much-needed transportation infrastructure projects were not included in the Alternatives Analysis screening process as part of this Study, they played an integral part in the development of a comprehensive vision, project goals, and public engagement effort. They were also included for reference as part of the Study’s interactive map.

These previous recommendations and planned projects are listed in Table 1 and identified in the focus area maps of this Study.

<table>
<thead>
<tr>
<th>ID</th>
<th>RECOMMENDATION/PROJECT</th>
<th>ORIGINAL SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Sidewalk from Clayton to Steele Street on south side of McWilliams Park, including ADA curb ramp</td>
<td>Denver CIP</td>
</tr>
<tr>
<td>B</td>
<td>Signal replacement at Yale &amp; Colorado Boulevard (northern intersection)</td>
<td>Safer Main Streets grant application (DRCOG)</td>
</tr>
<tr>
<td>C</td>
<td>At-grade crossing of the East Harvard Gulch at University Boulevard</td>
<td>Denver Moves: Pedestrians &amp; Trails</td>
</tr>
<tr>
<td>D</td>
<td>New signal at Yale &amp; East Yale Circle</td>
<td>Elevate Denver Bond Program</td>
</tr>
<tr>
<td>E</td>
<td>Multimodal infrastructure improvements on Yale from I-25 east to Quebec Street</td>
<td>Elevate Denver Bond Program</td>
</tr>
<tr>
<td>F</td>
<td>High Line Canal crossing improvements near the intersection of Yale &amp; Holly Street</td>
<td>Elevate Denver Bond Program</td>
</tr>
<tr>
<td>G</td>
<td>Wrong way driving signal and signage improvements at Yale &amp; I-25</td>
<td>CDOT</td>
</tr>
<tr>
<td>H</td>
<td>Establish University Boulevard as a medium-capacity transit corridor</td>
<td>Denver Moves: Transit</td>
</tr>
<tr>
<td>I</td>
<td>Establish Colorado Boulevard as a high-capacity transit corridor</td>
<td>Denver Moves: Transit</td>
</tr>
<tr>
<td>J</td>
<td>Sidewalk construction from Marion Circle to Lafayette Street</td>
<td>Elevate Denver Bond Program</td>
</tr>
<tr>
<td>K</td>
<td>On-street bike facilities on Franklin, St. Paul, and Dahlia Street</td>
<td>Denver Moves: Bicycles</td>
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</table>
Prioritization

The Study began with the goal of identifying and prioritizing community supported multimodal transportation infrastructure improvements that were both feasible and aligned with the goals, priorities, and evaluation criteria utilized through the Alternatives Analysis process. The project lists that have been generated for each Focus Area, as well as for the overall corridor, contain a variety of improvements. Each provides an incremental step towards achieving the corridor’s vision of connecting people, places, and services through a safe and efficient transportation network.

Given the unpredictability of future resources and funding, this Study details these recommended improvements in short-, mid-, and long-term categories. The recommendations were also measured against the informative considerations identified as part of the Alternatives Analysis process. Further information on how these recommendations were analyzed and scored can be found in the Alternatives Analysis Technical Memo included as an appendix to this Study.

Short-Term

These short-term improvements represent “quick wins” at various locations throughout the Study area and present a range safety, connections, and multimodal benefits. They are, by and large, relatively inexpensive or have clear funding opportunities, boast broad community support, require minimal coordination, and further the project goals of increasing safety, building connections, and developing the multimodal network.

Mid-Term

These mid-term recommendations represent safety, connectivity, and multimodal improvements that require a more substantial capital investment, more focused coordination with partners and other jurisdictions, and/or additional planning efforts to validate their design and eventual construction. Several are also dependent upon other recommendations or anticipated developments to warrant their installation.

Long-Term

The long-term recommendations include those which require a major capital investment, intensive coordination with partners and/or other jurisdictions, or have significant external project issues/risks such as potential right-of-way acquisitions, utility coordination, or substantial planning or engineering. These projects are more complex and require further evaluation to determine their need.
Focus Areas

The corridor was divided into seven focus areas based on adjacent land uses, existing conditions, and infrastructure demands. The proposed cross-sections for each character area, as shown throughout this report, will guide future funded construction efforts that address lane width modifications, sidewalk improvements, and multimodal infrastructure design and construction. As a result, these elements can be built efficiently and in their optimal location, minimizing throwaway cost and redesign.

The recommendations developed through the Study process are generally categorized across seven focus areas and depicted in Figure 15 below. The focus areas include:

1. North-South Connections
2. McWilliams Park
3. Yale Way
4. Yale & Colorado Intersection
5. Yale Station
6. Yale Station to the High Line Canal
7. Corridor-Wide Infrastructure

Further information about these areas and other corridor-specific information can be found in the Existing Conditions Report, included in Appendix A.
Corridor-Wide Infrastructure

There are numerous transportation infrastructure considerations that were evaluated as part of the Study that did not fit into other focus areas. These included intersection improvements as well as wayfinding and larger-scale multimodal planning and design opportunities. These recommendations were predominantly focused on enhancing safety for all modes throughout the corridor.

The recommendations are mapped in Figure 16 with further details provided in Table 2. Additional renderings and photographs are included in Figures 17 – 19.

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**Figure 16** - Corridor-Wide Infrastructure Recommendations
<table>
<thead>
<tr>
<th>PROJECT ID</th>
<th>RECOMMENDATION DESCRIPTION</th>
<th>PROJECT TYPE</th>
<th>KEY IMPLEMENTATION STRATEGIES</th>
<th>POTENTIAL FUNDING SOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHORT-TERM</td>
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<tr>
<td>5</td>
<td>Improved signage/wayfinding to reinforce community connections to the multimodal network</td>
<td>Wayfinding</td>
<td>Improved wayfinding/signage alternatives throughout the corridor could be packaged together for efficient design and installation. This recommendation has a high return with minimal investment, community support, and meets the Study’s multimodal improvement goals. Wayfinding/signage examples are included in Figure 17.</td>
<td>City general funds</td>
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<td>MID-TERM</td>
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<tr>
<td>2</td>
<td>Design and install a new neighborhood bikeway on East Vassar Avenue from approximately Josephine to Madison Streets (exact facilities and project limits TBD)</td>
<td>Bike</td>
<td>Internal coordination within DOTI is needed to evaluate the merits of a new bike facility on Vassar Avenue in favor over the existing bike lanes on Yale. Further analysis is needed to determine the best corridor, facility type, project limits, and connections to the surrounding bicycle network. Would meet Study’s safety, connectivity, and multimodal goals.</td>
<td>City general funds, Community Transportation Network (CTN) Program</td>
</tr>
<tr>
<td>3</td>
<td>Upgrade the existing buffered bike lane on East Yale Avenue from Josephine to Jackson Streets to a protected bike lane (PBL) and extend the bike facility west to Downing Street</td>
<td>Bike</td>
<td>Internal coordination and planning efforts within DOTI are needed to evaluate the merits of both an upgraded and expanded bike facility on Yale. Further analysis is needed to determine the best project limits and facility type. An example of a protected bike lane is included in Figure 18. Would meet Study’s safety, connectivity, and multimodal goals.</td>
<td>City general funds, Community Transportation Network (CTN) Program</td>
</tr>
<tr>
<td>6</td>
<td>Design and install a new bicycle route on Amherst Avenue as an alternative to crossing Colorado Boulevard at East Yale Avenue. The routing accesses Amherst Avenue via Nielsen Lane or Jackson Street, travels east across Colorado Boulevard and allows for travel north to East Yale Avenue via Brook Drive or south to the High Line Canal via Birch Street and Highline Place.</td>
<td>Bike</td>
<td>Internal coordination and planning efforts within DOTI are needed to evaluate the merits of a new bike facility bypassing Yale &amp; Colorado. Further analysis is needed to determine the best project limits facility type. Coordination with CDOT focused on modifications to the signal at Amherst &amp; Colorado is recommended to ensure smooth installation. Further detail, including a rendering of the crossing at Amherst Avenue and Colorado Boulevard is included in Figure 19. Further analysis also needed to identify proper treatment, if any, at Yale &amp; Jackson Street. Would meet Study’s safety, connectivity, and multimodal goals.</td>
<td>City general funds, Community Transportation Network (CTN) Program, CDOT funds</td>
</tr>
<tr>
<td>LONG-TERM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Design and install a shared use path on East Yale Avenue from Colorado Boulevard east to the High Line Canal (widths vary depending on ROW constraints)</td>
<td>Bike/Ped</td>
<td>Coordination between DOTI, CDOT, RTD, and Arapahoe County is recommended where jurisdiction is applicable to confirm a continuous path along this entire segment can be built. The Study recognizes the high capital investment needed to accomplish this as well as significant right-of-way constraints and limitations. Design efforts should also account for any potential drainage issues along these segments of Yale. Snow and ice buildup concerns should be addressed if path is on south side of Yale.</td>
<td>City general funds</td>
</tr>
</tbody>
</table>
Wayfinding/signage improvements to direct residents and visitors alike to the corridor’s multimodal connections and various destinations would provide a much-needed source of information while also encouraging multimodal travel along preferred routes. These signs would be placed at decision points and key locations along the various routes. Partnerships with corridor businesses/stakeholders could be developed to pursue enhanced signage, as seen with the West Colfax example to the left.
A protected bike lane (PBL) is physically separated from motor traffic and distinct from the sidewalk. PBLs have different forms but share common elements – they provide space that is intended to be exclusively or primarily used by bicycles, and are separated from motor vehicle travel lanes, parking lanes, and sidewalks.

In situations where on-street parking is allowed, PBLs are located to the curbside of the parking (in contrast to bike lanes).

1 https://www.burlingtonvt.gov/DPW/ProtectedBicycleLanes
2 http://www.bikearlington.com/why-protected-bike-lanes-matter-to-us-all/
3 https://sfbike.org/news/were-changing-how-protected-bike-lanes-get-built/
The Yale & Colorado Boulevard intersection poses safety risks for all travelers, regardless of mode. Diverting bicycle traffic off Yale to Amherst Avenue (by way of Nielsen Lane or Jackson Street), presents a safer alternative for everyone. Green conflict markings across Colorado would keep bicyclists top of mind for drivers and improved signal timing would offer a safer crossing for pedestrians. Bicyclists crossing Colorado traveling east could rejoin Yale by way of Brook Drive or the High Line Canal via Birch Street and Highline Place at Mamie D Eisenhower Park.
North-South Connections

Crossing East Yale Avenue is often seen as cumbersome, at minimum, due to the lack of signalized or otherwise marked and protected crossings – especially west of Colorado Boulevard. Some of these crossings are upwards of 0.7 miles apart. These recommendations are spread throughout the corridor and look to improve crossing options for both bicyclists and pedestrians with minimal impact to vehicular traffic flows. These recommendations are also focused on ensuring any new crossing meets all relevant City and County of Denver standards.

The recommendations are mapped in Figure 20 with further details provided in Table 3. Additional renderings and photographs are included in Figure 21.

**FIGURE 20 - NORTH-SOUTH CONNECTIONS RECOMMENDATIONS MAP**
### TABLE 3 - NORTH-SOUTH CROSSINGS RECOMMENDATIONS

<table>
<thead>
<tr>
<th>PROJECT ID</th>
<th>RECOMMENDATION DESCRIPTION</th>
<th>PROJECT TYPE</th>
<th>KEY IMPLEMENTATION STRATEGIES</th>
<th>POTENTIAL FUNDING SOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SHORT-TERM</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7</td>
<td>Improved signal timing at Yale &amp; University Boulevard to enable safer crossings, regardless of transportation mode</td>
<td>Vehicular</td>
<td>Has a high return with a minimal investment, broad community support, and meets the Study’s safety and multimodal improvement goals by enhancing access to St. Anne’s School.</td>
<td>City general funds</td>
</tr>
<tr>
<td>8</td>
<td>Enhanced crossing per Denver’s <em>Uncontrolled Crossing Guidelines</em> at Yale Avenue and Cherry Street to better facilitate pedestrian movement.</td>
<td>Bike/Ped</td>
<td>Has broad community support and meets the Study’s safety improvement goals. There is a crossing approximately 400 feet to the west at South Clermont Drive, but the transit stops for the 46 are located at Cherry. It’s unclear whether a crossing is warranted at Cherry, and the exact location of the crossing needs further analysis based upon guidelines established through the Uncontrolled Pedestrian Crossing Guidelines (UPCG). Snow and ice buildup considerations should be considered on south side of crossing. Crossing examples included in Figure 21.</td>
<td>City general funds</td>
</tr>
<tr>
<td>9</td>
<td>Enhanced crossing per Denver’s <em>Uncontrolled Crossing Guidelines</em> at Yale &amp; Gaylord Street for safer access to St. Anne’s School</td>
<td>Bike/Ped</td>
<td>Has broad community support and meets the Study’s safety improvement goals. Recommendations 9 and 10 are located very close together (within 700 feet of each other). Only one recommendation would realistically be designed and installed. The exact location of the crossing needs further analysis based upon guidelines established through the UPCG. Snow and ice buildup considerations should be considered on south side of crossing. Crossing examples included in Figure 21.</td>
<td>City general funds</td>
</tr>
<tr>
<td>10</td>
<td>Enhanced crossing per Denver’s <em>Uncontrolled Crossing Guidelines</em> at Yale &amp; Race Street for safer access to St. Anne’s School</td>
<td>Bike/Ped</td>
<td>Has broad community support and meets the Study’s safety improvement goals. Recommendations 9 and 10 are located very close together (within 700 feet of each other). Only one recommendation would realistically be designed and installed. The exact location of the crossing needs further analysis based upon guidelines established through the UPCG. Snow and ice buildup considerations should be considered on south side of crossing. Crossing examples included in Figure 21.</td>
<td>City general funds</td>
</tr>
<tr>
<td><strong>MID-TERM</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Improved signal timing at Yale &amp; Downing Street to accommodate new traffic conditions following an anticipated development west of Porter Hospital</td>
<td>Vehicular</td>
<td>Installing this recommendation should be contingency upon completion of the new development. Coordination with the City of Englewood is recommended to ensure new timing is palatable to both parties. Meets the Study’s safety and connectivity goals.</td>
<td>City general funds, potential impact fees from new development</td>
</tr>
<tr>
<td>12</td>
<td>Enhance bicycle and pedestrian crossings at Yale &amp; Franklin Street to better facilitate movements across Yale</td>
<td>Bike/Ped</td>
<td>These enhancements should be dependent upon the new bike facility being planned, designed, and installed on both Streets. Further analysis is needed to determine the best elements to enhance the crossings. Meets the Study’s safety, connectivity, and multimodal goals.</td>
<td>City general funds, Community Transportation Network (CTN) Program</td>
</tr>
</tbody>
</table>
Cole Sukle, 14, was in the bike lane at East Yale and Madison Street when he was tragically killed after being hit by a car on July 13, 2016. Another teen, Jack Mahoney, was seriously injured in the crash.

FIGURE 21 - MID-BLOCK CROSSING EXAMPLES

Mid-block crossings enable safer crossings at locations not already served by the existing traffic network. They typically have signage noting the possible presence of bicyclists and/or pedestrians and a demarcated crosswalk via striping. Denver’s Unprotected Pedestrian Crossing Guidelines (UPCG) lays out the process/requirements for identifying, evaluating, and installing a new crossing.

5 https://cni.pmgnews.com/images/artimg/00003594986407.jpg
McWilliams Park

Robert H. McWilliams Park, located immediately north of East Yale Avenue between Clayton and St. Paul Streets, is a significant community asset. The park boasts a soccer field, basketball court, and a playground (known as the ‘Dinosaur Playground’). The East Harvard Gulch Trail also travels through the park from west to east, providing connections to Harvard Gulch Park to the west and Colorado Boulevard to the east.

The park is one of several across the City identified for improvements through the Elevate Denver Bond Program. In addition to needed repairs to the concrete dragon (often misidentified as a dinosaur), an additional $550,000 in improvements focused on the picnic area and basketball courts are planned.

The recommendations are mapped in Figure 22 with further details provided in Table 4. Additional renderings and photographs are included in Figure 23.
<table>
<thead>
<tr>
<th>PROJECT ID</th>
<th>RECOMMENDATION DESCRIPTION</th>
<th>PROJECT TYPE</th>
<th>KEY IMPLEMENTATION STRATEGIES</th>
<th>POTENTIAL FUNDING SOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHORT-TERM</td>
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<tr>
<td>13</td>
<td>Improved wayfinding signage at the East Harvard Gulch Trail at York, Josephine, Columbine, Madison, Monroe, and Jackson Streets</td>
<td>Wayfinding</td>
<td>Improved wayfinding/signage alternatives throughout the corridor could be packaged together for more efficient design and installation. This recommendation has a high return with minimal investment, broad community support, and meets the Study’s multimodal improvement goals. See Figure 17 for wayfinding examples and Figure 23 for potential locations.</td>
<td>City general funds</td>
</tr>
<tr>
<td>14</td>
<td>Formalize specific access points to McWilliams Park through signage, crosswalks, and other appropriate treatments</td>
<td>Bike/Ped</td>
<td>Improved wayfinding/signage alternatives throughout the corridor could be packaged together for more efficient design and installation. This recommendation has a high return with minimal investment, broad community support, and meets the Study’s multimodal improvement goals. See Figure 17 for signage examples and Figure 23 for potential locations.</td>
<td>City general funds</td>
</tr>
<tr>
<td>LONG-TERM</td>
<td></td>
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<tr>
<td>15</td>
<td>Study the formalization the footpath off Vassar Avenue and the possibility of low-flow crossing to connect the north and south sides on the northeast edge of the Park</td>
<td>Bike/Ped</td>
<td>DPR is evaluating the feasibility of a low flow crossing consisting of a concrete bridge without a railing. This would provide a north and south connection across Harvard Gulch while the nearest crossings exist at Fillmore Street to the west and South Adams Street to the east. This option provides minimal return for the investment and would require floodplain evaluation and hydraulic and hydrologic analysis. Meets the Study’s connectivity goals. See Figure 23 for more information.</td>
<td>City general funds</td>
</tr>
<tr>
<td>16</td>
<td>Upgrade the traffic signal at Yale &amp; Fillmore Street and explore the addition of curb extensions along the southern crossing of Fillmore to shorten the crossing distance and improve visibility</td>
<td>Vehicular/Bike/Ped</td>
<td>This option would require significant capital investment to upgrade the signal if the signal is still within its life cycle. Potential drainage concerns arise with bulb out construction and would require inlets and/or cross-drains to not further impede known drainage issues in the area. There are other options that could minimize the crossing distance including flex posts. Pedestrian visibility improvements can be accomplished with increased summertime maintenance activities. Meets the Study’s safety and connectivity goals. See Figure 23 for more information.</td>
<td>City general funds</td>
</tr>
</tbody>
</table>
In addition to being a well-utilized community asset, McWilliams Park also serves as a transportation alternative for bicyclists and pedestrians by way of the East Harvard Gulch Trail. The recommendations proposed in and around the park including introducing wayfinding to additional points throughout the park as well other destinations along the Yale corridor (recommendation #13), formalizing access points into the park for safe and predictable path entrances (recommendation #14), and evaluating the potential for a second access point from the University Park neighborhood north of the park (recommendation #15). These recommendations all work towards the goal of both improving the East Harvard Gulch Trail and further encouraging park utilization.
Yale Way

East Yale Avenue becomes East Yale Way between St. Paul and Madison Streets where the road takes a slight curve to the south. This segment of the roadway poses pervasive safety issues for all modes, as a now sub-standard buffered bike lane is present in addition to two general purpose vehicular lanes (one in each direction). To add further complexity to the curve, there are also elevation changes through this segment of the curve. These recommendations are intended to address pervasive safety issues in this section of the East Yale Avenue corridor. There is no line of sight in through the Yale Way curve and vehicles frequently travel higher than the posted speed limit. Recommendations for this focus area include:

The recommendations are mapped in Figure 24 with further details provided in Table 5. Additional renderings and photographs are included in Figure 25.

Cole Sukle, 14, was in the bike lane at East Yale and Madison Street when he was tragically killed after being hit by a car on July 13, 2016. Another teen, Jack Mahoney, was seriously injured in the crash.
<table>
<thead>
<tr>
<th>PROJECT ID</th>
<th>RECOMMENDATION DESCRIPTION</th>
<th>PROJECT TYPE</th>
<th>KEY IMPLEMENTATION STRATEGIES</th>
<th>POTENTIAL FUNDING SOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SHORT-TERM</strong></td>
<td></td>
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<tr>
<td>18</td>
<td>Additional signage or speed alert to promote speed-calming measures throughout the curve</td>
<td>Vehicular/Bike/Ped</td>
<td>Coordination within DOTI needed to identify the exact type of signage and/or speed alert device to install and where. Has a high return with a minimal investment, has broad community support and meets the Study’s safety improvement goals. See Figure 25 for speed alert signage examples.</td>
<td>City general funds</td>
</tr>
<tr>
<td><strong>DID NOT PROCEED PAST ALTERNATIVES ANALYSIS</strong></td>
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<tr>
<td>17</td>
<td>Improved signage to address reduced line of sight in the roadway curve</td>
<td>Vehicular/Bike/Ped</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Radar based speed displays similar to those shown here are highly effective in notifying drivers to slow down in areas of high-speed concern. Also known as driver feedback signs, these traffic calming devices display the speed of the passing vehicle and sometimes include flashing light bars. Signs of this type would be effective in calming traffic speeds approaching the curve at Yale Way and potential bicycle and/or pedestrian conflicts near McWilliams Park and the East Harvard Gulch Trail. These signs are not equipped with cameras or ticketing capabilities – they are purely intended to reinforce the existing speed limits and work with drivers to create a safer travel environment.
Yale & Colorado Intersection

The intersection of East Yale Avenue and Colorado Boulevard consists of East Yale Avenue intersecting with Colorado Boulevard in two different places – the southern intersection about 275 feet south of the northern intersection. This disconnected intersection, requiring travel through two signalized intersections, poses safety and traffic efficiency issues with through travel on East Yale Avenue.

The southern intersection has numerous civic facilities located immediately adjacent, including the University Hills YMCA, Mercy Street Reformed Church, and Denver Fire Department Station 24. The signals at this intersection were recently modified to include a leading pedestrian indicator (LPI) which gives pedestrians and cyclists the opportunity to enter the intersection 3-7 seconds before vehicles are given a green light. With this head start, pedestrians can better establish their presence in the crosswalk before vehicles have priority to turn. The northern intersection has BikeSource, Schlessman YMCA, University Hills Shopping Center, and University Hills Plaza immediately adjacent to the intersection.

Both the northern and southern portions of the intersection need reconstruction for maintenance purposes.

These recommendations are focused on improving safety and efficiency in and around the intersection of Yale & Colorado Boulevard. As shown in the existing conditions report (and known throughout the community), this intersection has a hazardous history of vehicle, pedestrian, and bicycle crashes. Additionally, the dual signal jog poses operational complexities that were further analyzed through the Study’s VISSIM analysis, the results of which are available in Appendix E.

The recommendations are mapped in Figure 26 with further details provided in Table 6. Additional renderings and photographs are included in Figures 27 – 30.

FIGURE 26 - YALE & COLORADO RECOMMENDATIONS MAP
TABLE 6 - YALE & COLORADO RECOMMENDATIONS

<table>
<thead>
<tr>
<th>PROJECT ID</th>
<th>RECOMMENDATION DESCRIPTION</th>
<th>PROJECT TYPE</th>
<th>KEY IMPLEMENTATION STRATEGIES</th>
<th>POTENTIAL FUNDING SOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SHORT-TERM</strong></td>
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<tr>
<td>19</td>
<td>Install a dedicated left turn signal from northbound Colorado Boulevard to westbound Yale Avenue.</td>
<td>Vehicular</td>
<td>Continued coordination between DOTI and CDOT to ensure smooth installation efforts as this project is already in the works within DOTI. This recommendation provides only vehicular efficiency benefits. Meets the study’s safety goals. See Figure 29 for more information.</td>
<td>City general funds, CDOT funds</td>
</tr>
<tr>
<td>20</td>
<td>Provide structural and educational wayfinding improvements to connections along Yale, to key activities centers (i.e. YMCA, DFD Station), and through retail centers and commercial developments</td>
<td>Wayfinding</td>
<td>Improved wayfinding/signage alternatives throughout the corridor could be packaged together for more efficient design and installation. This recommendation has a high return with minimal investment, broad community support, and meets the Study’s multimodal improvement goals. See Figure 17 for wayfinding examples and Figures 28 and 29 for potential locations.</td>
<td>City general funds</td>
</tr>
<tr>
<td>21</td>
<td>Install an LPI and bike detection at Amherst Avenue and Colorado Boulevard (to be installed in conjunction with a future bikeway on Amherst). LPIs are intended to be installed at all approaches to the Colorado &amp; Yale intersection.</td>
<td>Bike/Ped</td>
<td>Coordination between DOTI and CDOT recommended to ensure smooth installation. This recommendation has independent utility and can be installed outside of Recommendation #6 (Amherst Bike Facility) due to pedestrians and cyclists using this intersection as a bypass to the Yale &amp; Colorado intersection. Meets the Study’s safety, connectivity, and multimodal goals. See Figure 19 for more information.</td>
<td>City general funds, Community Transportation Network (CTN) Program (future), CDOT funds</td>
</tr>
<tr>
<td>22</td>
<td>Rebuild the traffic signal and both existing triangular raised islands at the northern intersection to improve signal timing for pedestrians and provide a safer and more comfortable crossing. This rebuild is also intended to relocate the signal pole on the west side of Colorado Blvd to provide a clear walkway and space for pedestrians to queue. (Figure 16)</td>
<td>Vehicular/Bike/Ped</td>
<td>The signal poles have obvious state of good repair concerns and are in poor condition with visible rust. Reconstruction of these poles can also include both LPI deployment across both crosswalks at this intersection and a potential reconstruction of the “porkchops” (pedestrian and bicyclist refuges). This recommendation has broad community support and meets the Study’s safety improvement goals. Coordination between DOTI and CDOT recommended to ensure smooth design and installation efforts. See Figure 31 for more information.</td>
<td>City general funds, CDOT funds, Safer Main Street grant program (DRCOG)</td>
</tr>
<tr>
<td>24</td>
<td>Improve wayfinding to route people from the Harvard Gulch Trail across Colorado Boulevard.</td>
<td>Wayfinding</td>
<td>Explore a partnership with the YMCA to help facilitate this connection. Improved wayfinding/signage alternatives throughout the corridor could be packaged together for more efficient design and installation. This recommendation has a high return with minimal investment, broad community support, and meets the Study’s multimodal improvement goals. See Figure 17 for wayfinding examples.</td>
<td>City general funds</td>
</tr>
<tr>
<td><strong>MID-TERM</strong></td>
<td></td>
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</tr>
<tr>
<td>23</td>
<td>Address free right turns that impede safe crossings with signal improvements and/or a no right turn cycle in the northern intersection. There is a potential for a raised crossing to further slow turning movements and tighten the turning radius.</td>
<td>Vehicular/Bike/Ped</td>
<td>Coordination between DOTI, CDOT, and the Denver Fire Department is recommended to ensure smooth planning, design, and installation of any signal or intersection modifications, including the potential for raised crosswalks. Design efforts should also account for any potential drainage issues at the intersection and the impact constructing raised crosswalks would have. Meets the Study’s safety goals. See Figures 29 and 30 for more information.</td>
<td>City general funds, CDOT funds</td>
</tr>
</tbody>
</table>
FIGURE 27 - ENLARGEMENTS SHOWING RECOMMENDED IMPROVEMENTS AT THE YALE AVENUE & COLORADO BOULEVARD INTERSECTION
The East Harvard Gulch Trail abruptly ends just east of Jackson Street at the YMCA, placing bicyclists and pedestrians into a parking lot which poses inherent safety risks in addition to impacts to parking lot vehicle circulation. Additionally, there is no wayfinding present to guide bicyclists and pedestrians to or from the trail or to other corridor destinations. By placing intuitive, clear wayfinding in strategic locations, the East Harvard Gulch Trail could become an even more relied upon multimodal transportation asset in the community. Given the proximity of the trail’s eastern terminus to Colorado Boulevard, exploring a partnership to formalize and harden a connection would also help further connect bicyclists and pedestrians to the broader transportation network while simultaneously providing a safer route to make that connection.
Numerous recommendations – focused on both vehicular as well as multimodal priorities – were focused at and around the Yale & Colorado Boulevard intersection. The disconnected intersection is inherently less efficient, however traffic flows and turning movements pose additional safety issues. Improvements such as introducing LPI and raised crossings to slow traffic and improve pedestrian safety look to balance transportation needs.
Raised crosswalks are ramped speed tables spanning the entire width of the roadway. They are typically marked with paint and/or special paving materials. These crosswalks act as a traffic-calming measure that allow the pedestrian to cross at-grade with the sidewalk while simultaneously slowing traffic, thereby creating a safer crossing condition for all, regardless of mode. The crosswalk table is designed to allow the front and rear wheels of a passenger vehicle to be on top of the table at the same time, reducing potential issues with low-profile vehicles.

7 https://www.nycstreetdesign.info/sites/default/files/2020-01/2.3.4.01%20IMG_20190731_090136.jpg
The existing crossing at Yale & Colorado Boulevard is in poor condition and needs repair. The pedestrian refuges (porkchops) are small and barely raised above the surface of the roadway, posing a comfort and perceived issue for bicyclists and pedestrians. Gravel and other debris often collects across the ramps, posing an issue for wheelchairs. Additionally, the traffic signal poles are in poor conditions. A reconstructed or otherwise improved condition may not result in larger refuges due to right-of-way and other roadway geometry considerations, but could provide a safer, more comfortable crossing via raised crossings, relocated signal poles, and additional signage and striping.
Yale Station

The Yale Station was constructed in 2006 as part of the Transportation Expansion (T-REX) Project. The station provides access to the E, F, and H light rail lines with service to Downtown Denver, the Denver Tech Center, and City of Aurora. The station also services bus route 46 with service connecting the Southmoor Station, Yale Station, Colorado Station, and Cherry Creek Shopping Center by way of Hampden Boulevard, South Tamarac Street, East Yale Avenue and Colorado Boulevard.

Numerous developments have been constructed within the station area in the last 15 years. These includes apartments, senior housing, and office space. A new traffic signal is also being construction at East Yale Avenue and South Forest Street to facilitate safe and efficient movement across East Yale Avenue for residents of the University Hills neighborhood to access the transit station.

Additionally, the tree canopy on Yale east of Colorado Boulevard is lacking in comparison to that west of Colorado. While trees have been planted in and around the station, additional efforts should be undertaken, when possible, on a corridor-wide level.

These recommendations address safety and circulation concerns raised through the Study process. There are multiple improvements currently underway throughout the station area, including the installation of a new traffic signal, ADA ramps, crosswalks, and median at Yale Circle (to be complete in 2021). The Southeast Mobility Hubs Study will address other more complex improvements outside of the East Yale Avenue corridor such as bicycle and pedestrian access to the station from East Vassar Avenue.

The recommendations are mapped in Figure 31 with further details provided in Table 7. Additional information is included in Figure 32.
### TABLE 7 - YALE STATION RECOMMENDATIONS

<table>
<thead>
<tr>
<th>PROJECT ID</th>
<th>RECOMMENDATION DESCRIPTION</th>
<th>PROJECT TYPE</th>
<th>KEY IMPLEMENTATION STRATEGIES</th>
<th>POTENTIAL FUNDING SOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MID-TERM</strong></td>
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<tr>
<td>25</td>
<td>Sidewalk construction in missing gaps on East Yale Circle near the Yale Station Park-n-Ride Bike/Ped</td>
<td>Recommend that the Southeast Mobility Hubs Study being completed by Transportation Solutions (and others) includes further analysis on this recommendation due to transit access and safety-focused components. Meets the Study's connectivity goals.</td>
<td>City general funds, RTD funds</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Improve multimodal access and movement at Yale Station throughout the station area, including potential wayfinding, crosswalks, sidewalks, and station access path through the parking lot Bike/Ped</td>
<td>Recommend that the Southeast Mobility Hubs Study being completed by Transportation Solutions (and others) includes further analysis on this recommendation due to transit access and safety-focused components. Meets the Study's safety and connectivity goals.</td>
<td>City general funds, RTD funds</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Improve pedestrian-scale lighting at Yale Station throughout the station area Bike/Ped</td>
<td>Recommend that the Southeast Mobility Hubs Study being completed by Transportation Solutions (and others) includes further analysis on this recommendation due to transit access and safety-focused components. Meets the Study's safety goals.</td>
<td>City general funds, RTD funds</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Formalize a pedestrian and bicycle connection from the Yale Station to East Vassar Avenue (requiring modification to the sound wall). This would be a new LRT station access point Bike/Ped</td>
<td>Recommend that the Southeast Mobility Hubs Study being completed by Transportation Solutions (and others) includes further analysis on this recommendation due to transit access and safety-focused components. Further coordination with the University Hills North neighborhood, RTD, and Arapahoe County is needed to ensure their concerns are heard prior to any decision being made. Meets the Study's connectivity goals. See Figure 33 for more information.</td>
<td>City general funds, RTD funds</td>
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</tbody>
</table>
Introducing an access point off Vassar Avenue into the Yale Station Park-n-Ride parking lot (red circle above) would drastically reduce the distance University Hills residents must travel to access RTD services. The yellow line noted above is a typical walk/drive from Vassar and Dahlia to the station. The new access point would cut that same origin and destination distance by 50% (blue line). The access point would only be for bicyclists and pedestrians, not vehicles. Additional parking control measures should be evaluated as part of the planning effort for this improvement.
Yale Station to the High Line Canal

The 2,000-foot segment of East Yale Avenue between Yale Station and the High Line Canal represents the most vehicular-oriented area of the corridor. This area sees narrow (substandard) sidewalks, excessively wide travel lanes, the Yale & I-25 interchange, higher travel speeds, and the highest traffic volumes of the entire Study area. Numerous unsafe crossing movements are present across all modes.

The tree canopy on Yale east of Colorado Boulevard is lacking in comparison to that west of Colorado. While trees have been planted in and around the station, additional efforts should be undertaken, when possible, on a corridor-wide level.

These recommendations are focused on improving the bike and pedestrian environment from the Yale Station east to the High Line Canal, including through the Yale & I-25 interchange. This is the busiest segment of the corridor in traffic volumes, speeds, and bike/ped volumes.

The recommendations are mapped in Figure 33 with further details provided in Table 8. Additional renderings and photographs are included in Figures 34 – 37.
<table>
<thead>
<tr>
<th>PROJECT ID</th>
<th>RECOMMENDATION DESCRIPTION</th>
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<th>KEY IMPLEMENTATION STRATEGIES</th>
<th>POTENTIAL FUNDING SOURCES</th>
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</thead>
<tbody>
<tr>
<td><strong>SHORT-TERM</strong></td>
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<tr>
<td>30</td>
<td>Bicycle/pedestrian crossing safety improvements at I-25 on/off ramps including additional signage, improved crossings, pedestrian refuge(s), lighting, and formalizing the footpath from Service Road south to the Yale &amp; I-25 northbound I-25 on-ramp.</td>
<td>Bike/Ped</td>
<td>Recommend that the Southeast Mobility Hubs Study being completed by Transportation Solutions (and others) includes further analysis on this recommendation due to transit access and safety-focused components. Coordination between DOTI and CDOT recommended due to right-of-way and wayfinding elements. Meets the Study's safety, connectivity, and multimodal goals. See Figure 36 for more information.</td>
<td>There is the potential for an incremental approach to the installation of the safety improvement components. This could allow for further collaboration and a joint funding approach between DOTI and CDOT.</td>
</tr>
<tr>
<td>34</td>
<td>Design and install intersection improvements at Yale &amp; Hudson Street (south)/Service Road (north), potentially including crosswalks, curb extensions, and lane striping changes to improve intersection function and safety.</td>
<td>Vehicle/Bike/Ped</td>
<td>Recommend investigating the potential to implement this recommendation in conjunction with #31 (Sidewalk and Travel Lane Standardization) for capital and schedule efficiencies. This recommendation has a high return with minimal investment, broad community support, and meets the Study’s safety improvement goals. See Figure 37 for more information.</td>
<td>City general funds</td>
</tr>
<tr>
<td>35</td>
<td>Enhance the connection to the High Line Canal at Grape Street, including signage visibility to enhance safety.</td>
<td>Bike/Ped</td>
<td>Improved wayfinding/signage alternatives throughout the corridor could be packaged together for more efficient design and installation. This recommendation has a high return with minimal investment, broad community support, and meets the Study’s multimodal improvement goals.</td>
<td>City general funds</td>
</tr>
<tr>
<td><strong>MID-TERM</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>33</td>
<td>Install LPI and pedestrian signage at the southbound I-25 on-ramp</td>
<td>Bike/Ped</td>
<td>Further analysis of traffic conditions at the Yale &amp; I-25 interchange is needed. In-depth coordination with CDOT is needed as well as modeling the impacts of slowing or otherwise altering traffic flows accessing the interstate. Meets the Study’s safety goals.</td>
<td>City general funds, CDOT funds</td>
</tr>
<tr>
<td><strong>LONG-TERM</strong></td>
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<tr>
<td>29</td>
<td>Traffic calming measures for vehicles approaching I-25 from both the eastbound and westbound approaches</td>
<td>Vehicle/Bike/Ped</td>
<td>Further analysis of traffic conditions at the Yale &amp; I-25 interchange is needed and in consideration of the new signal installed at Yale Circle in 2020. In-depth coordination with CDOT is needed as well as modeling the impacts of slowing traffic, and whether the new signal at Yale Circle alleviates the eastbound issue. A solar powered radar speed sign could quell the existing concerns on the westbound approach. Integration and coordination with the upcoming CDOT wrong way driving signal and signage improvements project is required. Meets the Study’s safety goals.</td>
<td>City general funds, CDOT funds</td>
</tr>
<tr>
<td>PROJECT ID</td>
<td>RECOMMENDATION DESCRIPTION</td>
<td>PROJECT TYPE</td>
<td>KEY IMPLEMENTATION STRATEGIES</td>
<td>POTENTIAL FUNDING SOURCES</td>
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</tr>
<tr>
<td>31</td>
<td>Add consistent widened sidewalks and standardize travel lane widths from Clermont Drive to Holly Street</td>
<td>Bike/Ped</td>
<td>Coordination between DOTI, CDOT, RTD, and Arapahoe County is recommended where jurisdiction is applicable to ensure smooth planning, design, phasing, and installation of sidewalk upgrades and travel lane adjustments. The Study recognizes the high capital investment needed to accomplish this as well as right-of-way constraints and limitations. Design efforts should also account for any potential drainage issues along these segments of Yale. Meets the Study's safety goals. See Figure 37 for more information.</td>
<td>City general funds, CDOT funds</td>
</tr>
<tr>
<td>32</td>
<td>Safety measures to improve/control the right turn onto Yale Avenue from northbound I-25</td>
<td>Vehicle/Bike/Ped</td>
<td>Further analysis is needed for converting to a controlled right. The implications to the off-ramp queue lengths would require modeling. In-depth coordination with CDOT is needed as this change could cause a ripple effect and alter the configuration of the entire interchange. Integration and coordination with the upcoming CDOT wrong way driving signal and signage improvements project is required. Meets the Study's safety goals. See Figure 38 for more information.</td>
<td>City general funds, CDOT funds</td>
</tr>
</tbody>
</table>
FIGURE 35 - YALE STATION TO THE HIGH LINE CANAL RECOMMENDATIONS OVERVIEW

- **Enlargement A: I-25**
- **Enlargement B: Hudson**

Where possible, expand to maximum of 12' and meet City of Denver’s Pedestrian and Trail Standards.

Need coordination with Arapahoe County and CDOT.
Highway interchanges are inherently complex and can be difficult – if not dangerous – for bicyclists and pedestrians to travel through. High travel speeds and traffic flows (especially in rush hours), and the potential for drivers making unsafe movements all pose issues for pedestrian and bicyclists alike. By introducing protected pedestrian crossings by way of the center median and maximizing the width of a future shared use path, a more comfortable multimodal environment can begin to take hold. Tightening the turning radii from the offramps and introducing striping and/or vertical barriers (i.e. flex posts), conflicts with turning vehicles could be minimized.
The crossing at Yale & Hudson (south)/Service Road (north) has wide travel lanes, no marked pedestrian crossings, and poses safety issues for vehicles turning onto Yale. By introducing striping and vertical elements (flex posts) to standardize the travel lane widths and minimize crossing lengths for pedestrians as well as installing a signalized pedestrian crossing similar to a high-intensity activated crosswalk (HAWK) beacon, the intersection can see balanced prioritization between vehicles and bicyclists/pedestrians.
APPENDICES

A – Existing Conditions Report
B – Stakeholder Working Group Meeting Summaries
C – Public Open House Summaries
D – Alternatives Analysis Technical Memo
E – VISSIM Analysis Findings