PARKER ROAD/QUINCY AVENUE/SMOKY HILL ROAD INTERSECTION IMPROVEMENT STUDY

STUDY REPORT

September 2016

Submitted to

City of Aurora

Aurora, CO

Submitted by

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ACKNOWLEDGEMENTS

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INTRODUCTION

The City of Aurora initiated the Parker Road/Quincy Avenue/Smoky Hill Road Intersection Improvement Study to provide a comprehensive transportation study of the Parker Road and Quincy Avenue intersection, the Quincy Avenue and Smoky Hill Road intersection, and the interaction of traffic operations between the two intersections. This report documents the results of the study conducted to identify and evaluate system management and operational improvements.

This Study Report summarizes the evaluation and recommendations for improvements at and between the Parker Road and Quincy Avenue and the Quincy Avenue and Smoky Hill Road intersections. The Final Existing Conditions Summary, completed in December 2015, provides additional information and details regarding the current and anticipated future conditions of the study area with regard to the multimodal transportation system.

Study Area

The study focused on conditions, operations, and potential improvements at the Parker Road and Quincy Avenue and the Quincy Avenue and Smoky Hill Road intersections. To take into account the potential for indirect or secondary causes or effects to the intersections, a larger study area was considered to include the adjacent signalized intersections.

The study area limits are along Parker Road, from approximately one-half mile north of Quincy Avenue (through the Lehigh Avenue intersection) to one-half mile south of Quincy Avenue (through the Temple Drive intersection). The study area includes Quincy Avenue from west of Parker Road through the Chambers Road intersection, and includes Smoky Hill Road from north of the Quincy Avenue intersection to south of the Tufts Place intersection. The study area is shown in Figure 1.

Regional Planning Context

Parker Road, Quincy Avenue, and Smoky Hill Road serve as major arterial routes for commuters, connecting the southeast metropolitan area with southern Aurora, Centennial, and Arapahoe County. These roadways are vital to the regional transportation system as a whole.

Relevant planning studies from communities within the surrounding region were reviewed to identify planned improvements to the transportation system within or in close proximity to the study area. The planning studies of significance included:

- 2040 Fiscally Constrained Regional Transportation Plan (2040 RTP) (2015)
- City of Aurora Comprehensive Plan (2009)
- Aurora Bicycle and Pedestrian Master Plan (2012)
- Arapahoe County 2035 Transportation Plan (2010)
- Parker Road Corridor Study (2009)
Figure 1: Study Area
The **2040 Fiscally Constrained Regional Transportation Plan** is a long-range transportation plan outlining transportation system needs and identifying improvements that can be reasonably expected in the region over the next 25 years, given current funding levels. There was only one fiscally-constrained roadway improvement included in the current plan within the study area, which is the widening of Parker Road from Quincy Avenue to Hampden Avenue to four lanes in each direction. This project is funded by DRCOG controlled funds and is projected to occur between years 2025 and 2034.

The **City of Aurora Comprehensive Plan** includes vision and plans/programs for transportation within the city. The plan does not identify major transportation improvements along Parker Road, Quincy Avenue, or other roadways within close proximity to the study area. The comprehensive plan is currently being updated with an updated plan, named “Aurora Places”, expected for adoption by City Council by the end of 2017.

The City of Aurora adopted the **Aurora Bicycle and Pedestrian Master Plan** in 2012. The plan included a review of the **City of Aurora Comprehensive Plan** and identified recommendations for bicycle and pedestrian transportation. Near the Parker Road and Quincy Avenue and the Quincy Avenue and Smoky Hill Road intersections, the plan includes a sidewalk connector (a shared pedestrian and bicycle path along the street) along Quincy Avenue from Parker Road to east of Chambers Road.

The **Arapahoe County 2035 Transportation Plan** was updated in 2010. The plan acknowledges the importance of Quincy Avenue as a regional transportation corridor extending from Parker Road to the rural areas east of the metropolitan area. The 2035 plan also identifies a grade-separated interchange at the Parker Road and Quincy Avenue intersection, widening Parker Road to six lanes between Orchard Road and Quincy Avenue, a multi-use path on the west side of Parker Road from Orchard Road to Quincy Avenue, a pedestrian grade separation across Parker Road south of the Temple Avenue intersection, and transit enhancements along Parker Road from I-225 to E-470.

The **Parker Road Corridor Study** documented the development and analysis of alternatives for transportation improvements to the Parker Road corridor from Hampden Avenue to E-470. In the study, it was recommended that a grade-separated interchange be implemented at the intersection of Parker Road and Quincy Avenue, in addition to widening Parker Road between Hampden Avenue and Arapahoe Road. The study also recommended improvements to existing transit stops and pedestrian enhancements, including a parallel adjacent multi-use path along Parker Road. Short-term recommendations related to bicycle and pedestrian transportation within the study area include providing sidewalk connections leading to transit stops, trails, and major attractions and providing bicycle route signing and striping.
PROJECT GOALS

The City of Aurora initiated this intersection study to identify and assess potential transportation improvements for the Parker Road and Quincy Avenue and the Quincy Avenue and Smoky Hill Road intersections. The following goals for recommended improvements were developed in coordination with the City staff on the Project Team with review by agency stakeholders and the general public.

*The goals of any transportation improvements recommended by this study are to reduce congestion, improve operations, and improve safety along Quincy Avenue at and between the Parker Road and Smoky Hill Road intersections with funding that may be obtained within the near term.*

Need for Intersection Improvements

Parker Road, Quincy Avenue, and Smoky Hill Road serve as major arterial routes for commuters, connecting the southeast metropolitan area with southern Aurora, Centennial, and Arapahoe County. These roadways are vital to the regional transportation system as a whole. Improvements to the intersections of these important arterials are needed to:

- Reduce congestion
- Improve operational performance
- Improve safety

The need for intersection improvements is based on the following information, summarized from the *Final Existing Conditions Summary* (December 2015).

Traffic Operations

Traffic volumes along Parker Road within the study area range from about 56,000 vehicles per day (vpd) south of Quincy Avenue to approximately 85,000 vpd north of Quincy Avenue. East of Parker Road, Quincy Avenue carries over 40,000 vpd while east of Smoky Hill Road Quincy Avenue carries 19,000 vpd. South of Quincy Avenue, Smoky Hill Road carries about 23,500 vpd.

Traffic flow through the study intersections is characterized by distinct peak hour directionality with heavy traffic flow in the northbound and westbound direction in the morning peak commute hours and in the southbound and eastbound direction in the evening peak commute hours. This traffic pattern is a reflection of the high use of the study area corridors by commuters living in the southeast metropolitan area destined for the Parker/Leetsdale corridor, Cherry Creek, downtown Denver, the Denver Technological Center, and the employment centers along the I-225 corridor. The heavy peak hour turning movements create the need for the multiple left and right turn lanes at the Parker Road and Quincy Avenue and Quincy Avenue and Smoky Hill Road intersections.

In 2020, traffic along Parker Road is projected to increase by approximately 3,500 and 4,000 vpd north and south of Quincy Avenue, respectively, compared to existing traffic volumes. Daily traffic volumes along Quincy Avenue are projected to increase modestly by up to almost 1,000 vpd within the study area. By 2040, traffic along Parker Road is projected to increase to over 108,000 vpd north of Quincy Avenue.
Quincy Avenue traffic volumes are projected to increase to over 45,000 vpd between the Parker Road and Smoky Hill Road intersections. Existing and future traffic volumes along area roadways are listed in Table 1.

### Table 1: Existing, 2020, and 2040 Traffic Volumes

<table>
<thead>
<tr>
<th>ROADWAY/LOCATION</th>
<th>DAILY TRAFFIC VOLUME (VEHICLES/DAY)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EXISTING (2015)</td>
<td>2020</td>
<td>2040</td>
</tr>
<tr>
<td>Parker Road – north of Quincy Avenue</td>
<td>85,500</td>
<td>89,100</td>
<td>108,300</td>
</tr>
<tr>
<td>Parker Road – south of Quincy Avenue</td>
<td>56,400</td>
<td>60,500</td>
<td>76,900</td>
</tr>
<tr>
<td>Quincy Avenue – east of Parker Road</td>
<td>41,200</td>
<td>42,000</td>
<td>45,800</td>
</tr>
<tr>
<td>Quincy Avenue – east of Smoky Hill Road</td>
<td>19,000</td>
<td>19,600</td>
<td>22,800</td>
</tr>
<tr>
<td>Smoky Hill Road – south of Quincy Avenue</td>
<td>23,500</td>
<td>24,000</td>
<td>26,600</td>
</tr>
</tbody>
</table>

Source: Traffic counts collected August 2015; 2020 and 2040 traffic forecasts based on DRCOG travel demand model

Existing traffic movements at the study intersections create operating conditions characterized by lengthy queues and vehicular delays. The Parker Road and Quincy Avenue intersection operates at LOS F and E during the AM and PM peak hours, respectively. Also, individual movements at all of the study area signalized intersections operate at LOS E or F during the AM and/or PM peak hours, including the key commuter movements at the Parker Road and Quincy Avenue (westbound right turn and southbound left turn movements) and the Quincy Avenue and Smoky Hill Road (northbound left turn movement) intersections. There are relatively long vehicle queues in the study area, particularly during the AM peak hour in the northbound and westbound directions. The queues along northbound Parker Road extend beyond Temple Drive and queues along westbound Quincy Avenue extend beyond the shopping center intersection during the AM peak hour.

In 2020, the Parker Road and Quincy Avenue intersection is expected to continue to operate at LOS F and E during the AM and PM peak hours, respectively. The shopping center signal on Quincy Avenue also continues to operate at LOS F in the PM peak hour. The other signalized intersections continue to operate at LOS D or better during each of the peak hours in 2020, although each intersection experiences a notable increase in overall delay. By 2040, the Parker Road and Quincy Avenue intersection is expected to operate at LOS F during both peak hours and the intersection is expected to experience an increase of over 70 seconds in overall intersection delay, compared to existing conditions. Existing and future peak hour intersection operations are shown in Tables 2 and 3.

### Table 2: Existing, 2020, and 2040 Intersection Operations – AM Peak Hour

<table>
<thead>
<tr>
<th>INTERSECTION</th>
<th>EXISTING</th>
<th></th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>LOS</td>
<td>DELAY (SEC/VEH)</td>
<td>LOS</td>
<td>DELAY (SEC/VEH)</td>
<td>LOS</td>
</tr>
<tr>
<td>Parker Rd and Lehigh Ave</td>
<td>C</td>
<td>32.9</td>
<td>D</td>
<td>43.4</td>
<td>D</td>
</tr>
<tr>
<td>Parker Rd and Quincy Ave</td>
<td>F</td>
<td>104.7</td>
<td>F</td>
<td>111.4</td>
<td>F</td>
</tr>
<tr>
<td>Parker Rd and Temple Dr</td>
<td>B</td>
<td>10.6</td>
<td>C</td>
<td>21.1</td>
<td>E</td>
</tr>
<tr>
<td>Quincy Ave and Shopping Ctr</td>
<td>B</td>
<td>17.3</td>
<td>B</td>
<td>18.7</td>
<td>C</td>
</tr>
<tr>
<td>Quincy Ave and Smoky Hill Rd</td>
<td>D</td>
<td>37.4</td>
<td>D</td>
<td>37.7</td>
<td>D</td>
</tr>
<tr>
<td>Quincy Ave and Chambers Rd</td>
<td>D</td>
<td>43.8</td>
<td>D</td>
<td>45.1</td>
<td>F</td>
</tr>
<tr>
<td>Smoky Hill Rd and Tufts Pl</td>
<td>B</td>
<td>10.3</td>
<td>B</td>
<td>11.0</td>
<td>B</td>
</tr>
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</table>
Table 3: Existing, 2020, and 2040 Intersection Operations – PM Peak Hour

<table>
<thead>
<tr>
<th>INTERSECTION</th>
<th>EXISTING</th>
<th></th>
<th></th>
<th>2020</th>
<th></th>
<th></th>
<th>2040</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LOS</td>
<td>DELAY (SEC/VEH)</td>
<td>LOS</td>
<td>DELAY (SEC/VEH)</td>
<td>LOS</td>
<td>DELAY (SEC/VEH)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parker Rd and Lehigh Ave</td>
<td>C</td>
<td>23.1</td>
<td>C</td>
<td>30.3</td>
<td>B</td>
<td>16.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parker Rd and Quincy Ave</td>
<td>E</td>
<td>62.5</td>
<td>E</td>
<td>73.9</td>
<td>F</td>
<td>136.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parker Rd and Temple Dr</td>
<td>A</td>
<td>8.9</td>
<td>B</td>
<td>11.2</td>
<td>E</td>
<td>57.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quincy Ave and Shopping Ctr</td>
<td>F</td>
<td>112.4</td>
<td>F</td>
<td>118.5</td>
<td>F</td>
<td>129.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quincy Ave and Smoky Hill Rd</td>
<td>C</td>
<td>23.6</td>
<td>C</td>
<td>24.2</td>
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<td>27.7</td>
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<td></td>
</tr>
<tr>
<td>Quincy Ave and Chambers Rd</td>
<td>C</td>
<td>34.5</td>
<td>D</td>
<td>39.2</td>
<td>E</td>
<td>60.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoky Hill Rd and Tufts Pl</td>
<td>A</td>
<td>6.2</td>
<td>A</td>
<td>6.3</td>
<td>A</td>
<td>7.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In 2020, the southbound queue at Parker Road and Quincy Avenue during the PM peak hour is expected to grow over 1,300 feet (total queue length 2,860 feet) while the northbound queue is expected to reach the upstream intersection at Temple Drive. Additionally, the northbound left queue at Quincy Avenue and Smoky Hill Road is expected to reach the upstream intersection at Tufts Place. By 2040, the Parker Road southbound approach at Quincy Avenue is expected to experience queues that reach the upstream signalized intersection at Lehigh Avenue during both the AM and PM peak hours.

**Area Multimodal Mobility**

There are a number of recreational trails within Cherry Creek State Park, west of Parker Road. The Cherry Creek Regional Trail is the main north/south connector trail west of the study area. From this trail, bicyclists can connect with the complete metropolitan bike path system.

The Parker Road and Quincy Avenue intersection provides direct access to Cherry Creek State Park from residential areas to the east. However, a pedestrian crossing is not provided on the north leg due to the geometry of the southbound triple left turn lanes and the westbound double right turn lanes. An advance pedestrian phase is provided for pedestrians in the south crosswalk to establish them in the walk prior to the release of the westbound Quincy Avenue left turning traffic. However, the conflict substantially affects the pedestrian/bicyclist comfort and safety crossing the six-lane highway. The signal timing provided for the pedestrian crossing also negatively impacts the intersection operations and the signal progression along Quincy Avenue, particularly during peak vehicular traffic periods.

This area is highly used during the weekend by bicyclists and pedestrians between the Cherry Creek State Park west of Parker Road, the commercial and retail centers north and south of Quincy Avenue, and residential neighborhoods in the surrounding area. Since the path into the park is on the northwest corner of the intersection, it is inconvenient for pedestrians that want to travel between the park and destinations on the northeast corner of the intersection to cross Parker Road on the south leg of the intersection. Pedestrians are routinely observed crossing Parker Road across the north leg of the Quincy Avenue intersection, although no crosswalk or pedestrian signal exists.

There are relatively high volumes of bicycle and pedestrian traffic along the Quincy Avenue sidewalks east of Parker Road. Sidewalks along Quincy Avenue are attached, lacking a buffer from vehicular traffic. Several pedestrians were observed crossing Quincy Avenue at uncontrolled locations to access the shopping centers and/or bus stops.
The study area is served by Regional Transportation District (RTD) Routes 135, 139, and the 483 providing connections to area neighborhoods from the Nine Mile Station at Parker Road and I-225 with 30-minute headways on weekdays. The eastbound and westbound bus stops along Quincy Avenue at Atchison Way, east of Parker Road, experience the greatest weekday use within the study area and they are also the busiest stops during the peak hours.

**Crash History**

A weighted annual crash rate was calculated by segment within the study area to compare the crash frequency along the corridors while considering the amount of traffic that travels the roadways. The crash rates were based on the three-year period of January 1, 2012 through December 31, 2014. To calculate the crash rate, property damage only crashes were given a weight of one, and injury crashes were given a weight of 5. The number of crashes was averaged over the three-year study period, and the average daily traffic volume for each segment was also used to calculate the average annual number of crashes per million vehicle miles traveled. Parker Road north of Quincy Avenue has a crash rate of 2.56 per million vehicle miles of travel (MVM), Parker Road south of Quincy Avenue has a crash rate of 9.39 crashes per MVM, and Quincy Avenue has the highest crash rate of 12.03 crashes per MVM. Except for Parker Road north of Quincy Avenue, these crash rates are substantially higher than CDOT’s (2012) principal arterial average crash rate of 2.76 crashes per MVM.

The most frequent crash type that occurred on both Parker Road and Quincy Avenue were rear-end crashes. These crashes account for over half of the total reported crashes on Parker Road, and 44 percent of the total crashes on Quincy Avenue. Broadsides, which typically occur at driveways or intersections, are the second most prevalent crash type. Notable locations with a high number of broadside crashes include the intersection of Parker Road with Temple Drive, which involved five broadside crashes, Parker Road and Rice Place, where eight broadsides occurred, and on Quincy Avenue in the area of Atchison Way, where 16 broadsides occurred. There were also a notable number of sideswipe crashes in the same direction at the intersection of Parker Road and Quincy Avenue, which had a total of 19 crashes of that type. All of these crash types are indicative of congestion, queuing, and restricted movements along the corridors.

High traffic volumes, frequent congestion, and moderate pedestrian and bicyclist demand result in safety concerns for pedestrians and bicyclists traveling through the study intersections. The Parker Road pedestrian crossing at Quincy Avenue currently conflicts with the westbound left turn movement and the eastbound right turn movement. There were four crashes that involved pedestrians, three of which occurred at signalized intersections along Parker Road, and one that occurred at an uncontrolled location on Parker Road south of Quincy Avenue. No crashes with bicyclists were reported in this time period.
ALTERNATIVES DEVELOPMENT AND ANALYSIS

An objective of the intersection improvement study was to identify transportation recommendations for the study intersections that can be implemented with funding that may be obtained within the near term. The alternatives development and evaluation process included developing screening criteria based on the Project Goals, developing a range of improvement concepts, and documenting the recommended improvements to streamline future funding applications.

General alternative concepts were developed and subjected to a Level 1 “fatal flaw” screening to eliminate alternatives that do not meet the Project Goals. Alternatives from the Level 1 screening that were recommended for further evaluation were refined to complete additional and more detailed analyses to compare the performance of each alternative against the evaluation criteria and to identify what impacts each alternative would have. Elements of the alternatives remaining after the Level 2 evaluation were packaged to optimize the operational and safety benefits and minimize community impacts and cost.

Initial Alternatives Development

The initial alternative concepts were developed based on input from the Project Team, public input, and the technical input of the study team. A variety of alternatives were identified for consideration, focusing on the project goals and the issues identified in the evaluation of existing conditions, which included vehicular traffic congestion and queuing along Quincy Avenue between Parker Road and Smoky Hill Road, and safety concerns related to vehicular movements and multimodal conflicts at the Parker Road and Quincy Avenue and the Quincy Avenue and Smoky Hill Road intersections.

The 2009 Parker Road Corridor Study evaluated and recommended a grade-separated interchange for the Parker Road and Quincy Avenue intersection. However, there is currently no identified funding for this type of large-scale project. An important goal of this study is to identify relatively low-cost improvements that may be implemented in the near term. The near term for this study is considered to be within approximately five years.

Potential Improvements outside Project Goals

There are potential improvement alternatives that were identified by the public and/or Project Team, but were not considered with this study because they do not meet the project goals or they are considered to be beyond near-term funding opportunities. These potential improvements, listed below, may be considered with other improvement projects or in future studies.

Potential Improvements outside Study Area and/or Project Goals

- Protected eastbound and northbound left turn phases at Parker Road and Temple Drive intersection
- Southbound continuous right turn lane along Parker Road south of Quincy Avenue
- Traffic signal at Smoky Hill Road and Evanston Street (accessing Sagebrush Elementary)
- Remove bus stop on southbound Parker Road at Atchison Way
- Sidewalks along Parker Road south of Temple Drive
- Lighting along Parker Road
Potential Large-Scale Improvement Options beyond Near-Term Funding Opportunities

- Continuous flow intersection at Parker Road and Quincy Avenue intersection
- Roundabout at Quincy Avenue and East Bank/ Harbor Plaza shopping center intersection
- Roadway connection between Atchison Way and Carson Street (alternate access from Parker Road to Smoky Hill Road)
- Roadway connection between Lehigh Avenue and Carson Street (alternate access from Parker Road to Smoky Hill Road)
- Grade separation of northbound Parker Road at Quincy Avenue
- Southbound Parker Road flyover to eastbound Quincy Avenue
- Interchange at Parker Road and Quincy Avenue

No Action Alternative

The No Action alternative is included as a means of comparison to the operational benefits that would result from potential improvements. Under the No Action alternative, only improvements that are already planned and funded by City of Aurora, CDOT, or other agencies are included.

There is only one fiscally-constrained roadway improvement within the study area, which is the widening of Parker Road from Quincy Avenue to Hampden Avenue to four lanes in each direction. This CDOT project is projected to occur between years 2025 and 2034, and was included in the 2040 travel demand modeling and alternatives evaluation for this study.

Level 1 Alternatives Screening

The purpose of the Level 1 screening is to eliminate potential improvement alternatives that do not meet the project goals. Level 1 screening was supported by the existing conditions data collected and the future traffic forecasts developed for the study. During the Level 1 screening, concepts were evaluated qualitatively with high-level traffic analysis, primarily using professional judgment of the Project Team engineering and planning staff.

Level 1 Alternatives

The initial range of improvement alternatives includes improvements at the Parker Road and Quincy Avenue intersection, the Quincy Avenue and East Bank/ Harbor Plaza shopping center intersection (east of Parker Road), the Quincy Avenue and Smoky Hill Road intersection, and the study area roadways. Given the identified area issues and project goals, the following improvement alternatives were considered in the Level 1 screening.

Parker Road and Quincy Avenue Intersection

Alternative A1 – Reevaluation of signal progression of southbound Parker Rd through eastbound Quincy Ave

Alternative A1 is intended to address delay for drivers turning left from southbound Parker Road to travel eastbound on Quincy Avenue. This movement is particularly heavy in the PM peak period, but is a major movement during off peak periods, as well. Many comments from the public meeting indicated frustration from drivers getting stopped at the shopping center signal after turning left from southbound Parker Road. Reevaluating the signal progression for this movement may reduce the
number of vehicles that queue along Quincy Avenue between the Parker Road and the shopping center traffic signal.

**Alternative A2 – Evaluation of pedestrian interval across Parker Rd**

Alternative A2 examines the duration and phasing of the pedestrian interval across Parker Road at Quincy Avenue to potentially improve pedestrian and bicyclist safety and comfort. Pedestrians currently cross the south leg of Parker Road during the east-west Quincy Avenue phase. However, pedestrians are provided walk time to travel halfway across the northbound lanes before the beginning of the east-west vehicular phase.

**Alternative A3 – Evaluation of eastbound left turn phase**

Alternative A3 examines the left turn phasing for eastbound vehicles on Quincy Avenue at Parker Road to potentially improve vehicular safety. Reevaluating this phase may reduce conflicts between eastbound left turning vehicles and westbound right turning vehicles from Quincy Avenue.

**Alternative A4 – Evaluation of westbound left turn phase**

Alternative A4 examines the left turn phasing for westbound vehicles on Quincy Avenue at Parker Road to potentially improve pedestrian and bicyclist safety and comfort. Pedestrians currently cross Parker Road on the south leg at the same time as the permissive westbound left turn phase. Drivers often do not yield to pedestrians in the crosswalk, which creates frustration for drivers and anxiety for pedestrians.

**Alternative A5 – Pedestrian/bicyclist median refuge**

Alternative A5 provides a median refuge for pedestrians and bicyclists crossing the intersection to rest or wait. The median refuge may improve pedestrian safety and comfort, as well as improve vehicular operational performance if time allotted for exclusive pedestrian/bicyclist crossing is reduced.

**Alternative A6 – Removal of pedestrian/bicyclist crossings at signal**

Alternative A6 prohibits pedestrian and bicyclists from crossing Parker Road at the Quincy Avenue traffic signal, potentially improving the vehicular operational performance and reducing congestion at the intersection. Signage and physical barriers would prevent people from attempting to cross Parker Road at the signal and direct people to cross Parker Road at alternate locations, which may improve pedestrian safety.

**Alternative A7 – Increased westbound right turn corner radius and third right turn lane during AM peak period (with overhead lane control)**

Alternative A7 increases the radius of the northeast corner of the intersection and provides a third lane for the westbound right turn movement during the AM peak period with overhead lane control signs (showing left/through/right lane). These improvements would provide more capacity for the heavy AM peak period traffic movement from westbound Quincy Avenue to northbound Parker Road, potentially improving operational performance and reducing congestion. At all other times of the day, the overhead lane control signs may indicate the current lane designation for the westbound Quincy Avenue approach.

**Alternative A8 – Additional westbound right turn lane as free right with acceleration lane to south shopping center access**

Alternative A8 consists of an additional right turn lane for westbound Quincy Avenue with an acceleration lane on northbound Parker Road terminating at the south shopping center access. This
free right turn movement would provide more capacity for the heavy AM peak period traffic movement, potentially improving operational performance and reducing congestion.

Alternative A9 - Additional westbound right turn lane as free right with acceleration lane to north shopping center access

Alternative A9 is similar to Alternative A8, with the lane on northbound Parker Road providing longer acceleration distance, terminating at the north shopping center access. This free right turn movement would provide more capacity for the heavy AM peak period traffic movement, potentially improving operational performance and reducing congestion.

Alternative A10 – At-grade loop in southwest quadrant for southbound left turn movement (two-phase signal)

Alternative A10 constructs an at-grade loop road in the southwest quadrant of the intersection for the heavy movement from southbound Parker Road to eastbound Quincy Avenue. The westbound Quincy Avenue left turn would travel around the loop to merge onto Parker Road south of the intersection. The northbound Parker Road left turn access to remaining properties would be unsignalized and located south of the loop road. The Parker Road and Quincy Avenue traffic signal could operate with two signal phases, potentially improving operational performance and reducing congestion while improving safety.

Quincy Avenue and Smoky Hill Road Intersection

Alternative B1 – Reevaluation of pedestrian crossing across west leg

Alternative B1 reevaluates the location, alignment, and treatment of the north-south pedestrian/bicyclist crossing of Quincy Avenue at Smoky Hill Road, particularly the west leg of the intersection due to the heavy northbound-to-westbound and eastbound-to-southbound vehicular movements. This alternative is intended to mitigate potential safety and comfort concerns for pedestrians and bicyclists due to conflicts with the heavy vehicular movements.

Alternative B2 – Evaluation of westbound left turn phase by time-of-day

Alternative B2 reevaluates the left turn phasing for westbound vehicles on Quincy Avenue at Smoky Hill Road. The westbound left turn phase is currently permissive only and a protected left turn phase may be provided during specific times of the day to potentially improve operational performance and safety.

Alternative B3 – Reevaluation of pavement markings for northbound left turn lanes through the intersection

Alternative B3 examines the pavement markings for the triple left turn movement from northbound Smoky Hill Road to westbound Quincy Avenue. Pavement marking changes may be able to provide a smoother turning radius for the heavy northbound left turn movement, potentially improving operational performance and safety.

Alternative B4 - Additional signage and pavement markings for eastbound shared right turn lane (overhead lane control)

Alternative B4 examines the signage and pavement markings for the eastbound Quincy Avenue right turn to increase the number of drivers utilizing the shared through-right turn lane to southbound
Smoky Hill Road. Increased lane utilization for that movement may improve operational performance, reduce congestion, and improve safety by reducing weaving movements on eastbound Quincy Avenue.

Alternative B5 – Additional exclusive eastbound right turn lane and exclusive northbound left turn lane

Alternative B5 widens the eastbound and northbound intersection approaches to construct an additional exclusive eastbound right turn lane and an exclusive northbound left turn lane. The additional capacity of the exclusive lanes for the heavy movements through the intersection is intended to improve operational performance and reduce congestion at the intersection.

Area Roadways or System Management

Alternative C1 – “Do Not Block” pavement markings at Quincy Ave and Atchison Way intersection (signage exists)

Alternative C1 adds pavement markings at the Atchison Way intersection of Quincy Avenue to discourage blocking the intersection with queuing from adjacent signalized intersections. This may help drivers to access Quincy Avenue from Atchison Way when vehicles queue through the intersection.

Alternative C2 – “Do Not Block” signs and pavement markings at Parker Rd and Rice Pl intersection

Alternative C2 adds signs and pavement markings at the Rice Place intersection of Parker Road to discourage blocking the intersection with queuing from adjacent signalized intersections. This may help drivers to access Parker Road from Rice Place when vehicles queue through the intersection.

Alternative C3 - Wider sidewalk with barrier along east side of Parker Rd north of Quincy Ave

Alternative C3 widens the existing attached sidewalk and adds barrier separation from the vehicular lanes along the east side of Parker Road between Quincy Avenue and Lehigh Avenue. The wider sidewalk and barrier would potentially improve safety and comfort for pedestrians/bicyclists.

Alternative C4 - Sidewalk along west side of Parker Rd south of Quincy Ave

Alternative C4 provides sidewalk along the west side of Parker Road south of Quincy Avenue where there is currently no sidewalk. The additional sidewalk would potentially improve safety and comfort for pedestrians/bicyclists.

Alternative C5 – Additional westbound lane on Quincy Ave between Parker Rd and Smoky Hill Rd

Alternative C5 widens Quincy Avenue to add a westbound lane between Smoky Hill Road and Parker Road, providing additional capacity from the northbound left turn lanes at Smoky Hill Road to the westbound right turn lanes at Parker Road. This lane would potentially reduce congestion along Quincy Avenue.

Alternative C6 - Multimodal grade separation of Parker Rd north or south of Quincy Ave

Alternative C6 provides a grade-separated crossing of Parker Road for pedestrians and bicyclists, located either north or south of the Quincy Avenue traffic signal. A grade separation would potentially improve the safety and comfort for pedestrians and bicyclists. By reducing the number of at-grade crossings at the signalized intersections, it may also improve operational performance and reduce congestion along Parker Road.

Level 1 Evaluation

Corridor alternative concepts were evaluated with a “Yes” or “No” answer to the following questions to demonstrate each alternative’s ability to meet the project goals.
Traffic Congestion
- Does the alternative reduce queue lengths along Quincy Avenue between Parker Road and Smoky Hill Road?

Intersection Operations
- Does the alternative improve the level of service or reduce overall delay at the study area intersections?

Safety Concerns
- Does the alternative provide multimodal safety improvements along Quincy Avenue and/or Parker Road?

Near Term Implementation
- Can the alternative be implemented in the near term within anticipated funding opportunities and required clearances?

The answers to the above questions were considered to assess whether each alternative adequately meets the project goals. The Level 1 Screening Matrix is included in Appendix A. Some alternatives were eliminated as a stand-alone alternative and included as elements of other alternatives that were carried forward to Level 2 screening. Alternatives eliminated from consideration in this study may be considered in future studies.

Level 2 Alternatives Screening
The purpose of the Level 2 screening is to determine any alternative fatal flaws related to the project goals or area constraints and to identify those alternatives that are most practical or feasible to carry forward for study recommendations.

The traffic operations of the alternatives were analyzed using Synchro/SimTraffic analysis software and Highway Capacity Manual methods to compare information about intersection operations and capacity. The potential physical impacts of the alternatives, such as right-of-way, were identified based on a conceptual design level of detail using the applicable City of Aurora design standards.

Level 2 Evaluation Criteria
The Level 2 evaluation criteria focus on performance measures related to the project goals and area constraints: traffic operations, safety, multimodal connectivity, and implementability. The alternatives were evaluated with the following criteria to identify fatal flaws related to infeasibility, high cost, or unacceptable community or environmental impacts, and to compare how well each concept meets the project goals. Evaluation criteria were quantified as much as possible with study data and readily-available information.

- Traffic Operations
  - Intersection 2020 and 2040 peak hour Level of Service (LOS)
  - 2020 and 2040 peak hour delay for intersection major movements
  - Peak hour 2020 and 2040 queue lengths for major movements
  - Peak hour 2020 and 2040 volume served

- Safety
  - Pedestrian LOS at signalized intersections
Vehicular and multimodal conflicts

Multimodal Connectivity
- Connections for area pedestrian/bicyclist movements
- Travel mode interconnectivity

Implementability
- Potential environmental impacts and required clearances
- Right-of-way (ROW) required
- Access modifications
- Constructability (e.g., drainage, utilities)
- Relative construction costs
- Compatibility with area long-term plans

Level 2 Alternatives
The following seven packaged alternatives were developed from the intersection and system alternatives carried forward from the Level 1 screening. Each packaged alternative is defined by the Level 1 alternatives listed below it.

- Alternative 1: Pedestrian/Bicyclist Crossing Modifications
  - A6 – Removal of Pedestrian Crossing
  - B1 – West Pedestrian Crossing
  - B3 – NB Left Turn Pavement Markings
  - B4 – EB Right Turn Signage and Markings
  - C3 – Wider Sidewalk North of Quincy
  - C4 – Sidewalk South of Quincy

- Alternative 2: Signing, Striping, and Signal Progression Modifications
  - A1 – SB Left Turn Signal Progression (with 150-second cycle)
  - B1 – West Pedestrian Crossing
  - B3 – NB Left Turn Pavement Markings
  - B4 – EB Right Turn Signage and Markings

- Alternative 3: Signing and Signal Modifications with Overhead Lane Control
  - A7 – WB Right Turn Lane during AM Peak
  - B1 – West Pedestrian Crossing
  - B3 – NB Left Turn Pavement Markings
  - B4 – EB Right Turn Signage and Markings

- Alternative 4: Added Turn Lanes
  - A8 – Added WB Free Right to South Access
  - A2 – Pedestrian Interval across Parker
The Level 2 alternatives are illustrated in Figures 2 through 8.

Level 2 Evaluation

The purpose of the Level 2 evaluation was to complete detailed analysis to compare how well each alternative would perform and to identify what impacts each alternative would have based on the project goals and objectives. The detailed Level 2 Screening Matrix can be found in Appendix B. An alternative was not carried forward if the detailed evaluation showed the alternative does not meet the project goals or the alternative is unreasonable due to impacts and infeasibility.

Based on the Level 2 evaluation, Alternative 3 (Signing and Signal Modifications with Overhead Lane Control) and Alternative 5 (Added Turn Lanes with Signal Phasing Modifications) were determined to meet the intent of the project goals while minimizing community impacts. These alternatives were carried forward for further refinement and final study recommendations.

Recommended Improvements

With the two alternatives remaining after the Level 2 screening, the most beneficial elements of each alternative were packaged to optimize the operational and safety benefits and minimize community impacts and cost.

A meeting with the agency stakeholders and a public open house were held to present the Level 2 evaluation results. Comments from stakeholders and the general public indicated general concurrence with the Level 2 alternative recommendations. Input on the remaining options was considered in the identification of the recommended improvements.
Figure 3. Alternative 2: Signing, Striping, and Signal Progression Modifications

- Remove crosswalk across west leg
- Remove island and modify corner to increase eastbound right-turn speed
- Reevaluate signal progression for southbound Parker Rd left-turn movement through shopping center signal
- 6-foot sidewalk minimizes right-of-way impact
- Modify medians and striping to facilitate northbound left-turn movement

Cherry Creek State Park

Parker Road

Atchison Way

Quincy Avenue

Carson Street

Smoky Hill Road
Figure 4. Alternative 3: Signing and Signal Modifications with Overhead Lane Control
Figure 5. Alternative 4: Added Turn Lanes

- New westbound right-turn lane as free right-turn movement with acceleration lane to south shopping center access
- 8-foot sidewalk
- Right-of-way impact
- Shift Quincy to north to minimize residential property impacts with eastbound right-turn lane
- 8-foot sidewalk
- Right-of-way impact
- Modify lanes to provide three exclusive northbound left-turn lanes
- 8-foot sidewalk
- Right-of-way impact
- 6-foot sidewalk
- New eastbound right-turn lane
- 8-foot sidewalk
- Right-of-way impact
- 8-foot sidewalk
- Remove crosswalk across west leg
Figure 6. Alternative 5: Added Turn Lanes with Signal Phasing Modifications
Figure 7. Alternative 6: Added Turn Lanes with Quincy Widening

- Right-of-way impact with retaining wall
- New westbound right-turn lane as free right-turn movement with acceleration lane to north shopping center access
- 8-foot sidewalk
- Right-of-way impact
- Widen Quincy to provide four westbound lanes between Smoky Hill and Parker Road
- Shift Quincy to north to minimize residential property impacts with eastbound right-turn lane
- 8-foot sidewalk
- Right-of-way impact
- Modify lanes to provide three exclusive northbound left-turn lanes
- 6-foot sidewalk minimizes right-of-way impact
- Add exclusive eastbound left-turn lane
- New eastbound right-turn lane
- Remove crosswalk across west leg
Figure 8. Alternative 7: Southbound Parker Loop and Smoky Hill Modifications

- Shift southbound Parker left-turn movement to at-grade loop
- State park right-of-way impact
- Shift westbound Quincy left-turn movement around loop
- Remove northbound and eastbound left-turn movements and operate as two-phase signal
- 8-foot sidewalk
- Signalized triple westbound right-turn lanes
- Right-of-way impact
- Remove crosswalk across west leg
- Remove island and modify corner to increase eastbound right-turn speed
- 6-foot sidewalk minimizes right-of-way impact
- Modify medians and striping to facilitate northbound left-turn movement
- Access remaining property via right-in/right-out
**STUDY RECOMMENDATIONS**

Based on the results of the alternatives development and evaluation process, the following combination of improvements is recommended for implementation with future design processes and further project development. This combination of multimodal improvements will provide the transportation facilities to meet the project goals of reducing congestion, improving operational performance, and improving safety with low-cost improvements that may be implemented in the near term.

Project Team members agreed to the identification of the recommendations from this intersection study. Meetings with agency stakeholders were held to present the alternatives development and evaluation results and recommendations. Public comments on the alternatives development and evaluation were centered on improving vehicular operations, reducing vehicular queues, and providing safe pedestrian and bicyclist facilities. The general public and agency stakeholders involved in the study indicated general concurrence with the evaluation results. The improvement recommendations are summarized in Figure 9.

**Roadway/Intersection Elements**

**Parker Road and Quincy Avenue Intersection**

The improvement recommendations for the Parker Road and Quincy Avenue intersection are illustrated in Figure 10. The intersection reconfiguration and operational modifications are recommended to accommodate existing and future travel demand focusing on the heaviest turning movements while improving the pedestrian and bicyclist comfort and safety at the intersection.

The recommended improvements include the reconfiguration of the westbound Quincy Avenue approach to provide triple right turn lanes and a shared through-left lane. This allows the three westbound lanes on Quincy Avenue to feed directly into the three right turn lanes, substantially increasing capacity for the heavy westbound-to-northbound movement while minimizing lane changing maneuvers. The radius of the northeast corner is increased to facilitate the turning movement and provide a raised island pedestrian refuge. The triple right turn lanes are signalized with a controlled pedestrian crossing.

Additionally, the recommended intersection improvements include shifting the crosswalk from the south leg of Parker Road to the north leg of the intersection. The intersection phasing provides the WALK signal with the westbound approach. The changes to the westbound lane configuration and east-west approach signal phasing eliminates any left- or right-turn traffic conflict with pedestrians/bicyclists in the crosswalk, which provides a significant improvement in the safety and comfort for pedestrians and bicyclists traveling across Parker Road.

Recommendations also include adding “DO NOT BLOCK” intersection pavement markings on Quincy Avenue at the Atchison Way intersection. These pavement markings are intended to facilitate neighborhood access by reducing the tendency of drivers to block the Atchison Way intersection with queuing during congestion.
Figure 9. Study Recommendations

- Do not block intersection pavement markings
- Do not block intersection warning to eastbound right-turning drivers
- Enhanced crosswalk markings (across Quincy and Smoky Hill)
- Blank-out sign for pedestrian
- 10-foot sidewalk (widened 2 feet)
- Enlarged corner area
- Through right lane
- 10-foot sidewalk (widened 2 feet)
- Remove bus stop
- New 12-foot sidewalk (widened 7 feet)
- Remove south crosswalk
- Through-left lane
- Detached 10-foot sidewalk
- Signalized crosswalk
- Signalized triple right-turn lanes
- Street print crosswalk markings (across Quincy and Parker)
- New curb ramp and connection to trail
- Crosswalk signal operates separate from eastbound left-turn

Cherry Creek State Park

Parker Road

Atchison Way

Carson Street

Quincy Avenue

Smoky Hill Road

0 100 200 Scale in feet
Figure 10. Recommended Improvements – Parker Road and Quincy Avenue Intersection

- **Cherry Creek State Park**
  - Crosswalk signal operates separate from eastbound left-turn
  - Street print crosswalk markings (across Quincy and Parker)
  - New curb ramp and connection to trail

- **Parker Road & Quincy Avenue**
  - Signalized right-turn lanes stop for pedestrian crossing and Parker Road traffic
  - Detached 10-foot sidewalk
  - 10-foot sidewalk (widened 2 feet)
  - Through-left lane
  - Signalized crosswalk
  - Remove south crosswalk
  - New 12-foot sidewalk (widened 7 feet)

- **Legend**
  - Existing Traffic Movements in Lane
  - Future Traffic Movements in Lane
  - Traffic Signal
  - Bus Stop

- **Scale in Feet**
  - 0 50 100

- **DO NOT BLOCK**
  - Text in each lane

- **Note**: Sidewalk and curb ramps to be installed with development of southwest corner

- **STUDY REPORT**

- **Report Title**: Parker Road/Quincy Avenue/Smokey Hill Road
  - Intersection Improvement Study
Enhanced Crosswalk Markings at Yale Avenue and Chambers Road Intersection

The recommendations for the Quincy Avenue and Smoky Hill Road intersection are illustrated in Figure 11. The intersection modifications are recommended to facilitate the heavy turning movements and optimize lane utilization through the intersection. The improvement recommendations include the reconfiguration of the northbound Smoky Hill Road approach to provide three exclusive left turn lanes and a shared through-right lane. This will allow drivers to utilize all three northbound left turn lanes from Smoky Hill Road to feed directly into the three westbound right turn lanes leading to northbound Parker Road, which is a significant movement through the study area during the morning peak commute hours.

The southbound approach is reconfigured with a shared through-right lane and a left-turn lane, providing acceptable traffic operations for southbound traffic with more sidewalk area in the northwest corner of the intersection. The intersection can be controlled with the northbound and southbound approaches running simultaneously and the left turn phasing can be modified (protected versus permitted operations) by the time of day as needed to optimize traffic operations.

Recommendations also include increasing the radius of the southwest corner of the intersection and removal of the small raised island to facilitate the eastbound-to-southbound turning movement. The eastbound Quincy Avenue approach lane configuration remains as it exists with one exclusive right-turn lane and a shared through-right lane. However, the modifications to the southwest corner should increase the turning speed and, therefore, increase the utilization of the shared through-right lane by turning traffic, particularly when the additional capacity is needed during the evening peak commute hours.

Multimodal Elements

Construction of added or widened sidewalks and improved pedestrian crossings are included in the recommended improvements for the Parker Road and Quincy Avenue and Quincy Avenue and Smoky Hill Road intersections. These recommendations provide improved connections between neighborhoods, retail centers, and the Cherry Creek State Park and regional trail system.

Enhanced crosswalk markings are recommended at the Parker Road and Quincy Avenue and Quincy Avenue and Smoky Hill Road intersections to increase the visibility of the crosswalks and increase driver awareness of potential pedestrians and/or bicyclists at the intersections. The enhanced crosswalk markings should be consistent with City of Aurora applications at other similar crossing locations.

The shift of the crosswalk across Parker Road will improve the travel path alignment for pedestrians along the north side of Quincy Avenue with the Cherry Creek State Park entrance and regional trail access in the northwest corner of the intersection. This may have an added benefit of reducing the number of pedestrians crossing Quincy Avenue at the shopping center signal east of Parker Road, where signs currently direct pedestrians for access to Cherry Creek State Park. Reducing the pedestrian activations at the shopping center signal would improve signal progression and operations for the Parker Road and Quincy Avenue intersection.

Bicycle detection and counting equipment is recommended to facilitate bicyclists crossing Parker Road at Quincy Avenue and to measure the use of the crossing to access Cherry Creek State Park and regional trail. Potential technologies for bicycle detection are discussed in a technical memorandum in Appendix C.
Figure 11: Quincy Avenue and Smoky Hill Road Intersection

- Pedestrian-scale lighting
- Through-right lane
- Enlarged corner area
- 10-foot sidewalk (widened 2 feet)
- Triple left-turn lanes

Legend:
- Existing Traffic Movements in Lane
- Future Traffic Movements in Lane
- Traffic Signal
- Bus Stop

Blank-out sign for pedestrian warning to eastbound right-turning drivers
Enhanced crosswalk markings (across Quincy and Smoky Hill)
Remove bus stop
At the Quincy Avenue and Smoky Hill Road intersection, a blank-out sign is recommended for the eastbound approach to warn right-turning drivers of pedestrians in the crosswalk across the south leg of the intersection. This blank-out sign would be activated with the pedestrian push button activation for the south crosswalk.

Additionally, it is recommended that the existing bus stop on southbound Smoky Hill Road immediately south of Quincy Avenue is removed with the southwest corner modifications. The increases in speeds for eastbound turning traffic may create conflicts with buses stopped at the bus stop. The removal of the bus stop has been discussed with RTD as part of this study and RTD is agreeable, given the current proximity of other bus stops. The bus stop removal will need to be approved by RTD during future project development.

A new 12-foot sidewalk is recommended along the west side of Parker Road and a widened 12-foot sidewalk is recommended along the east side of Parker Road from Quincy Avenue to Rice Place, improving the multimodal connection to the retail and commercial properties south of the intersection. The construction of this sidewalk will require driveway reconstruction with increased access control for the properties adjacent to Parker Road.

A widened 10-foot sidewalk with pedestrian-oriented lighting is recommended along the north side of Quincy Avenue from Parker Road to Dillon Way, east of Smoky Hill Road, improving comfort and safety for pedestrians and bicyclists along Quincy Avenue. The sidewalk in the northeast corner of the Parker Road and Quincy Avenue intersection is detached, providing a buffer to increase pedestrian comfort adjacent to the high right-turn traffic movement.

At the Quincy Avenue and Smoky Hill Road intersection, it is recommended to reconfigure the southbound approach for a shared through-right lane and a left-turn lane, removing an exclusive right-turn lane to provide more space for pedestrians in the northwest corner of the intersection. The enlarged corner area will increase pedestrian comfort adjacent to the heavy northbound left-turn traffic movement.

Potential wayfinding signage improvements to optimize the pedestrian and bicyclist movement benefits from the recommended improvements with routing through the study area are discussed in a technical memorandum in Appendix C.

**Constructability Considerations**

The recommended improvements are illustrated in a conceptual design plan set in Appendix D. The recommendations of this study are based on a conceptual level of design. Preliminary and final design will be based on a more comprehensive engineering evaluation as part of project development and may include design refinements to mitigate property or infrastructure impacts and/or reduce cost. With the development of the conceptual design, the following potential constructability issues were identified for consideration during future project development phases:

- At Parker Road and Quincy Avenue Intersection
  - Potential for significant drainage infrastructure and utility impacts in northeast corner due to improved westbound to northbound radius and widening for the sidewalk.
  - Possible retaining wall required in the northeast corner to address vertical changes and minimize right-of-way impacts (conceptual design includes graded slopes).
Reconfiguration of parking lot required due to right-of-way acquisition and reduction in parking capacity and circulation (conceptual design considers a reduction of 20 parking spaces).

Removal of trees and landscaping impacts along north side of Quincy Avenue.

Parker Road concrete pavement replacement with widening along the east side of intersection.

Southwest corner improvements required by others (assumed by development currently in process). Intersection design will need to tie into new corner property improvements.

Along Parker Road

- Sidewalk along west side of Parker Road and resulting driveway construction may have vertical impacts that require additional right-of-way and/or retaining walls.
- Potential utility impacts with sidewalk construction on both sides of Parker Road. Along the east side, overhead electric lines will need to be relocated for sidewalk widening.
- Conceptual design shows impacts to parking lots along the west side of Parker Road where parking and circulation is currently occurring in CDOT right-of-way. Potential reduction and/or reconfiguration to existing property parking capacity due to sidewalk and retaining wall construction.
- Northbound Parker Road outside lane reconstruction required north of Quincy Avenue due to sidewalk and curb & gutter reconstruction (existing curb & gutter is poured monolithically).

Along Quincy Avenue

- Asphalt overlay assumed on Quincy Avenue to address lane reconfigurations, with areas of full-depth pavement reconstruction required.
- Curb ramp reconstruction required along Quincy Avenue for non-compliant ramps.
- Drainage impacts in northeast corner of Quincy Avenue and shopping center intersection.
- Retaining wall reconstruction required along north side of Quincy Avenue east of shopping center intersection due to widened sidewalk.
- Median reconstruction required between Parker Road and the shopping center intersection and between Atchison Way and Smoky Hill Road to provide consistent lane widths. This also requires some full-depth pavement construction.
- Sidewalk and driveway construction may have vertical impacts that require additional right-of-way and/or retaining walls along the north side of Quincy Avenue, as well as potential utility impacts with resetting light poles and electric boxes.
- Drainage impacts along north side of Quincy Avenue between Atchison Way and Smoky Hill Road.

At Quincy Avenue and Smoky Hill Road Intersection

- Community wall reconstruction required in southwest corner of intersection.
- Modifications to island on Carson Street required to improve left turn lane approach angle.
- Landscaping impacts on all corners of intersection.
- Full depth pavement reconstruction and asphalt mill and overlay required.
- Drainage impacts in southeast corner due to island reconstruction.
Conceptual Cost Estimate

The approximate costs for the recommended improvements were estimated based on the conceptual level of design used in this study. The costs are in 2016 dollars. There are approximately $5.4 to $7.6 million in proposed improvements at and between the Parker Road and Quincy Avenue and Quincy Avenue and Smoky Hill Road intersections.

The project cost estimate includes conceptual right-of-way costs. Right-of-way acquisition quantities were calculated using the existing and proposed right-of-way lines, based on existing right-of-way from available GIS data. No additional right-of-way required for acquisition of total properties is expected for the improvements, so no quantity for total properties was included in these quantities. Temporary, utility, or maintenance easement costs were also not included. Specific right-of-way limits for improvements would not be set until further project development with the completion of preliminary and final design. However, the conceptual improvement plans and typical cross-sections provide a general indication of the potential future right-of-way needs.

Evaluation of Recommendations

A key element of the project goals is to identify improvements that can be implemented with funding that may be obtained within the near term. The City of Aurora intends to apply for DRCOG funding for project design and construction through the Transportation Improvement Program (TIP). DRCOG ranking criteria for project funding for roadway operational projects include delay reduction, crash reduction, transportation system management elements, and features improving multimodal connectivity. Other considerations include the location of projects near surrounding environmental justice populations and community benefits.

An evaluation of the recommended improvements utilizing the applicable DRCOG TIP application criteria is summarized in Table 4. The potential DRCOG TIP application points gained for the project are shown, based on the criteria established for the most recent TIP application cycle (2016-2021 TIP). With the expected traffic operations, safety, and multimodal benefits for the project as defined by this study, the project scores well for each of the evaluation criteria and is expected to be relatively competitive for receiving DRCOG TIP funding. This evaluation may need to be updated for the DRCOG TIP application with new traffic volumes or surrounding land use considerations.

Additional evaluation criteria are outlined in the evaluation of recommended improvements to provide additional performance measures (i.e. peak hour queue lengths, multimodal conflicts, environmental impacts, right-of-way, and cost) for consideration with potential funding sources and project development.

Traffic Operations

A DRCOG TIP project funding application considers traffic analysis for the project under existing traffic conditions, which is assumed to be 2020 for this project, since it was defined with desired implementation within five years. The intersection operational analysis results with the 2020 peak hour traffic volumes and the recommended intersection improvements show a substantial reduction in peak hour delay, particularly for the morning peak hour. The recommended improvements are also expected to substantially reduce the queue lengths for the heavy peak hour movements, with a 90% decrease in queue length for northbound Smoky Hill Road at Quincy Avenue in the morning peak hour.
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<td><strong>Traffic Operations</strong></td>
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| 2020 Peak Hour Vehicle Hours of Travel (VHT) Reduction | AM Peak Hour: 224 VHT (56% decrease)  
PM Peak Hour: 14 VHT (8% decrease) | N/A                                    |
| 2020 Peak Hour Delay Reduction (Person Hours of Travel) | AM Peak Hour: 306 PHT  
PM Peak Hour: 19 PHT | 18 pts (up to 18 points) |
| 2020 Peak Hour Queue Lengths (feet) | AM Peak Hour:  
Parker/Quincy WB Right: 188 ft (33% decrease)  
Quincy/Smoky Hill NB Left: 87 ft (90% decrease)  
PM Peak Hour:  
Parker/Quincy SB Left: 480 ft (no decrease)  
Quincy/Smoky Hill EB Right: 14 ft (74% decrease) | N/A                                    |
| **Safety** |                          |                                       |
| Potential Crash Reduction (Crashes Reduced per Mile) | 12.5 crashes reduced per mile | 4 pts (up to 7 points) |
| Vehicular and Multimodal Conflicts | ■ Decreases conflict of turning vehicles with shift of crossing across Parker at Quincy to north leg, removal of advanced walk signal, and signalization of the WB right turn movement.  
■ Decreases conflict of EB right turning vehicles with blank-out sign at Smoky Hill for pedestrian warning.  
■ Increased awareness of pedestrian/bicyclist crossings with enhanced crosswalk markings. | N/A                                    |
| Pedestrian/Bicyclist Connections | Sidewalks will be maintained or added as part of the project (minimum width of 5 feet). | Meets Roadway Operational Improvement Project Eligibility |
| Accommodation of Existing Transit | Existing bicycle or transit infrastructure is not eliminated as a result of the project. | Meets Roadway Operational Improvement Project Eligibility |
| **Multimodal Connectivity** |                          |                                       |
| Multimodal Features – Retained or Added | ■ New pedestrian/bicycle facility for bus stops with multiple routes  
■ Widened sidewalks (minimum 8 feet)  
■ Protected pedestrian roadway crossings  
■ New pedestrian linkage to adjacent land use  
■ Bike counters at reconstructed Parker/Quincy signal  
■ Pedestrian-oriented street lighting along Quincy Avenue | 9 points (up to 18 points) |
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| **Transportation System Management Features - Added** | ▪ Left turn lane at Smoky Hill intersection  
▪ Improved ITS infrastructure with remote video monitoring at reconstructed traffic signals  
▪ Bicycle detection at reconstructed Parker/Quincy signal | 3 points (up to 5 points) |
| **Potential Environmental Impacts** | ▪ Potential hazardous material site impacts with fueling station in southeast corner of Parker/Quincy  
▪ Need for avoidance of impacts to Cherry Creek State Park in NW corner with pedestrian crossing improvements | N/A |
| **Environmental Justice & Community Benefits** | ▪ Community benefits with additional and wider sidewalks and reduced crosswalk conflicts for improved pedestrian and bicycle safety and connections to bus stops. | 3 points |
| **Right-of-Way Required** | ▪ Less than 1.0 acre | N/A |

**Implementation**

**Constructability Considerations**

Parker/Quincy Intersection:
▪ Moderate drainage and utility impacts in NE corner of Parker/Quincy intersection and modifications required to drainage structure.
▪ Impacts to retaining wall along north side of Quincy east of shopping center signal with widened sidewalk.
▪ Reconfiguration of parking in northeast corner of Parker/Quincy intersection with reduced parking spaces.
▪ Relocation of overhead electric lines and retaining walls required for sidewalk widening along east side of Parker Road.
▪ Business parking circulation impacts with sidewalk construction along west side of Parker Road.

Quincy/Smoky Hill Intersection:
▪ Utility impacts with resetting light poles and electric boxes required along Quincy Avenue with sidewalk widening.
▪ Community wall reconstruction required in SW corner of Quincy/Smoky Hill intersection.
▪ Moderate drainage impacts in SE corner with island reconstruction.

**Funding**

| Estimated Project Cost | Construction: $5 – 7 Million  
Right-of-Way: $400,000 - $600,000  
Total: %5.4 – 7.6 Million | N/A |
Safety

The recommended improvements are expected to improve safety for all travel modes through the study intersections, focused on the reduction of multimodal conflicts. The shift of the pedestrian crosswalk at Parker Road to the north leg of the intersection with the reconfiguration of the westbound right turn lanes substantially reduces turning traffic conflicts with pedestrians/bicyclists in the crosswalk, which is considered a significant improvement over the existing conflicts typically experienced by pedestrians and bicyclists.

The blank-out sign at the Quincy Avenue and Smoky Hill Road intersection is also expected to improve multimodal safety with a warning for eastbound right-turning drivers of pedestrians in the crosswalk across the south leg of the intersection.

Multimodal Connectivity

The added or widened sidewalks surrounding the study intersections and improved pedestrian crossings at the intersection will provide improved connections between neighborhoods, retail centers, and the Cherry Creek State Park and regional trail system. The pedestrian-oriented street lighting along the north side of Quincy Avenue will encourage pedestrian travel along the arterial corridor.
AGENCY AND PUBLIC COORDINATION

The intersection study process emphasized involvement from City of Aurora staff, agency stakeholders, and the general public. Input from these groups was used to guide team decisions through a transparent process, resulting in study recommendations that best meet the needs of the local community.

Project Team

The Project Team was comprised of staff from internal City of Aurora departments, including Public Works and Planning and Development Services. The Project Team met every other week to discuss study progress and to provide direction regarding study tasks related to the area conditions, alternatives development and evaluation, and study recommendations.

Agency Stakeholder Coordination

This study included the formation of an Agency Stakeholder Group to facilitate coordination between the Project Team and local and regional partners.

The Agency Stakeholder Group was comprised of representatives of City of Aurora, Arapahoe County, DRCOG, CDOT, and Cherry Creek State Park. These meetings focused on coordination between City of Aurora and the other stakeholder agencies, and included discussion of area issues and constraints, alternatives development and screening, conceptual layout of potential intersection improvements, and the study recommendations with respect to other agency’s projects and priorities. Five Agency Stakeholder Group meetings were held as described in Table 5.

### Table 5: Agency Stakeholder Group Meeting Topics

<table>
<thead>
<tr>
<th>MEETING DATE</th>
<th>DISCUSSION TOPICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 25, 2015</td>
<td>- Study Overview</td>
</tr>
<tr>
<td></td>
<td>- Schedule</td>
</tr>
<tr>
<td></td>
<td>- Public and agency involvement and meeting plans</td>
</tr>
<tr>
<td></td>
<td>- Existing and forecasted area conditions</td>
</tr>
<tr>
<td>November 17, 2015</td>
<td>- Existing conditions summary</td>
</tr>
<tr>
<td></td>
<td>- Public outreach efforts</td>
</tr>
<tr>
<td></td>
<td>- Alternatives development</td>
</tr>
<tr>
<td></td>
<td>- Evaluation criteria</td>
</tr>
<tr>
<td>December 14, 2015</td>
<td>- Level 1 screening results</td>
</tr>
<tr>
<td></td>
<td>- Level 2 evaluation criteria</td>
</tr>
<tr>
<td></td>
<td>- Level 2 alternatives</td>
</tr>
<tr>
<td>January 29, 2016</td>
<td>- Public and stakeholder outreach efforts</td>
</tr>
<tr>
<td></td>
<td>- Level 2 screening results</td>
</tr>
<tr>
<td>June 7, 2016</td>
<td>- Public and stakeholder outreach efforts</td>
</tr>
<tr>
<td></td>
<td>- Recommended improvements</td>
</tr>
</tbody>
</table>
In addition to the Agency Stakeholder Group, coordination occurred with stakeholders during other small group meetings as follows:

- Cherry Creek State Park meeting – October 15, 2015
- RTD meeting – January 27, 2016
- Cherry Creek Racquet Club Homeowner’s Association meeting – April 12, 2016
- RTD meeting – May 20, 2016

**Public Outreach**

Public input was gathered throughout the intersection study process to understand the area issues and constraints and to develop solutions that best meet the needs of the local residents, businesses and commuters. Understanding the ideas, perspectives, and needs of the community members was critical to building broadly supported decisions and solutions. There were multiple opportunities for the public to engage and inform the study, including public open houses, surveys, and through the project-specific website (www.auroragov.org/parkerquincystudy).

**General Public Meetings**

This study held three public meetings in open house format. The first meeting, held on October 20, 2015, served to introduce the study process and discuss existing and potential future study area conditions. Approximately 90 people attended the meeting. The second meeting was held on March 3, 2016 to present the Level 1 and Level 2 improvement alternatives and associated evaluation. Approximately 55 people attended the meeting. The study recommended improvements were presented at the third and final meeting held on June 23, 2016. This last meeting was attended by approximately 50 individuals.

**Surveys**

An intercept survey was conducted at the trail accessing Cherry Creek State Park in the northwest corner of the Parker Road and Quincy Avenue intersection on Saturday, November 7, 2015. The survey gathered input regarding the existing walking and biking experience at the Parker Road and Quincy Avenue intersection, as well as trip purpose and routing.

In addition to the intercept survey at the intersection, surveys were distributed to Bicycle Aurora members and Adventure Cycling (business located in southwest quadrant of the Parker Road and Quincy Avenue intersection) customers for feedback regarding existing conditions and potential treatments for bicyclists and pedestrians at the study intersections. Surveys were distributed in November 2015 and May 2016.

These surveys provided another forum to share study information and gather input, focused on gathering input and feedback from the pedestrian and bicyclist perspective. Summaries of survey responses are included in Appendix E.

**Information Distribution**

The study utilized several methods of advertising and outreach. A postcard was distributed via U.S. Postal Service or email to nearly 4,500 property owners, tenants and other interested individuals prior to each public meeting. Public meetings were also preceded by a news release, which was sent to local media outlets as well as distributed by the City of Aurora and Arapahoe County communications staff to their citizen subscription lists. News stories were published by City of Aurora’s Channel 8 TV and AuroraTV.org prior to each public meeting.
To increase awareness of the study, door-to-door business visits were conducted prior to the first public meeting to each business in the commercial development area surrounding the Parker Road/Quincy Avenue intersection. Public meeting advertisements were distributed and many conversations were held with business tenants and property owners.

Public Comments

Input was solicited at all public meetings and community members were also able to submit comments via the study website throughout the course of the study. Summaries of comments received were subsequently posted on the study webpage, www.auroragov.org/parkerquincystudy.

Common public comments and responses are included in Table 6. Comments received were shared with study technical staff and the Agency Stakeholder Group for consideration during the alternatives development, evaluation, and recommendations process. Summaries of all comments received are included in Appendix E.

### Table 6: Public Comment Themes and Responses

<table>
<thead>
<tr>
<th>PUBLIC COMMENT THEME</th>
<th>METHOD OF ADDRESSING COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal timing improvements should be a big part of any recommendations.</td>
<td>The recommended improvements include an evaluation of the signal timing and progression with timing revisions to optimize the traffic flows and minimize vehicular delay.</td>
</tr>
<tr>
<td>The southbound to eastbound left turn traffic at Parker Rd and Quincy Ave is often stopped at the shopping center light after making the left turn onto Quincy Ave, which creates substantial back ups during peak hours.</td>
<td>The Quincy Ave traffic signal at the shopping center is coordinated with the Parker Road signal. However, the signal drops out of coordination when a pedestrian actuates the signal to cross Quincy Ave. The shift in the pedestrian crossing at Parker Rd to the north leg of the intersection may reduce the number of pedestrians crossing Quincy Ave at the shopping center signal, which would improve the signal progression between the two signals.</td>
</tr>
<tr>
<td>Drivers frequently do not yield to pedestrians/bicyclists in the crosswalk across the south leg of the Parker Road and Quincy Ave intersection.</td>
<td>The shift of the pedestrian crosswalk at Parker Rd to the north leg of the intersection with the reconfiguration of the westbound right turn lanes eliminates any left- or right-turn traffic conflict with pedestrians/bicyclists in the crosswalk.</td>
</tr>
<tr>
<td>It is very difficult to turn right or left from Atchison Way or Atchison Cir due to heavy congestion on Quincy Ave and vehicles blocking the intersection.</td>
<td>Recommendations include adding “DO NOT BLOCK” intersection pavement markings on Quincy Avenue at the Atchison Way/Atchison Cir intersection. These pavement markings are intended to reduce the tendency of drivers on Quincy Ave to block the intersection in queues.</td>
</tr>
<tr>
<td>If a free right turn lane is added for westbound Quincy Ave to northbound Parker Rd, it will be even more difficult to turn from Atchison Way to Parker Rd, north of Quincy Ave; it will create more weaving conflicts for drivers turning into the shopping center; and it will create a safety concern for pedestrians crossing Quincy Ave.</td>
<td>The recommended improvements include the reconfiguration of the westbound Quincy Ave approach to provide triple right turn lanes. The radius of the northeast corner is increased to facilitate the turning movement and provide a raised island pedestrian refuge. The triple right turn lanes are signalized with a controlled pedestrian crossing.</td>
</tr>
<tr>
<td>Drivers don’t understand that the eastbound center lane on Quincy Ave at Smoky Hill Rd can also turn right. Many drivers try to force into the right-turn only lane to turn right.</td>
<td>Recommendations include increasing the radius of the southwest corner of the Smoky Hill intersection and removal of the small raised island to facilitate the eastbound-to-southbound turning movement, as well as increased lane control signage. These modifications to the southwest corner should increase the turning speed and increase the utilization of the shared through-right lane by turning traffic.</td>
</tr>
</tbody>
</table>
Next Steps

This intersection improvement study is intended to identify the project elements and conceptual design for the implementation of the recommended improvements as funding is obtained. This study can also be used as a resource for documentation of the alternatives evaluation and public involvement process for future NEPA documentation, if required.

The next steps in the project development process include:
- Secure funding for identified improvements
- Complete NEPA analyses of intersection improvements (if required)
- Complete design
- Obtain right-of-way
- Complete agreements with participating agencies, neighborhood associations, or other entities regarding maintenance (if required)
- Complete construction

Environmental Process and Permit Requirements

The recommendations from this study were conceptually designed to minimize environmental impacts while meeting the Project Goals. Specific mitigation measures for remaining environmental impacts will be determined during subsequent NEPA evaluation processes, if required, during further project development. Construction of the recommended improvements may result in direct, indirect, and cumulative impacts to environmental resources depending on the type and location of the resource in proximity to the improvements. The potential environmental resources within the study area were identified with review of previous studies within the area and available information in the Final Existing Conditions Summary (December 2015) to understand environmental constraints for potential improvements.

If a project receives state or federal funding and/or involves a state facility (such as Parker Road), the results of this study will be carried forward into project development with additional environmental review (NEPA-level or similar state environmental review process) and design. If a project is solely funded with local funds, a NEPA review process would still be required if there is any “federal nexus”, such as a permit or an access to a state facility (such as Parker Road).

The environmental resources reviewed for this study were selected based on the characteristics of the study area and the potential for impacts from study recommendations. The resources considered are generally consistent with NEPA, its implementing regulations, and with FHWA and CDOT guidelines.

Section 4(f)/Section 6(f)

Section 4(f) of the U.S. Department of Transportation Act affords special protection to parks, recreation areas, and wildlife/waterfowl refuges that are open to the public. Use of a Section 4(f) property occurs when: (1) land is permanently incorporated into a transportation facility; (2) there is a temporary occupancy of land that is adverse in terms of the statute’s preservation purpose; or (3) there is a constructive use (the project’s impacts are so severe that the protected activities, features, or attributes of an adjacent property are substantially impaired). Section 4(f) is triggered for projects on CDOT roadways or
that have CDOT oversight due to federal or state funding. Cherry Creek State Park and associated trails are Section 4(f) properties.

Section 6(f) of the Land and Water Conservation Fund (LWCF) Act is overseen in Colorado by Colorado Parks and Wildlife and applies to all outdoor recreational facilities that were acquired or purchased, either partially or wholly, with funds from the LWCF. Section 6(f) requires that these properties be maintained as such in perpetuity and any conversion of the property must be coordinated with the Department of the Interior. Cherry Creek State Park was purchased with LWCF money and therefore is subject to Section 6(f) analysis, regardless of the project funding source.

The use of these resources should be avoided or minimized wherever possible. The shift of the pedestrian crosswalk to the north leg of the Parker Road and Quincy Avenue includes a new pedestrian curb ramp and trail connection in the northwest corner of the intersection, adjacent to park right-of-way. The conceptual design of the recommended improvements shows no impacts to the park right-of-way. However, this is based on a conceptual-level of design and GIS-based right-of-way information. Final design will be based on a comprehensive engineering evaluation and detailed land survey to establish right-of-way, which may reveal a need for park right-of-way to meet design standards for the pedestrian facilities.

The Section 4(f) “use” from the recommended improvements may include:

- Land from a Section 4(f) property is permanently incorporated into a transportation facility; this occurs when land from a Section 4(f) property is either purchased right-of-way or a piece of property has been acquired that allows permanent access onto the property such as a permanent easement. This is commonly referred to as a Direct Use.

- There is a temporary use, commonly referred to as temporary occupancy, when the Section 4(f) property, in whole or in part, is required for project construction-related activities. The property is not permanently incorporated into a transportation facility but the activity is considered to be adverse in terms of the preservation purpose of Section 4(f). If certain criteria are met, temporary occupancy does not constitute a use.

- There is no permanent incorporation of land from a Section 4(f) property, but the proximity impacts of a proposed project are so severe that the protected activities, features, or attributes that qualify the property for protection are substantially impaired. This is commonly referred to as a Constructive Use.

When FHWA determines that a project as proposed may use a Section 4(f) property, there are three methods available to approve the use; preparing a *de minimis* impact determination; applying a programmatic Section 4(f) evaluation; or preparing an individual Section 4(f) evaluation. If it is determined that the project will impact Cherry Creek State Park right-of-way, one of these processes will need to be completed. Because Cherry Creek State Park is also a Section 6(f) property, conversion of any park right-of-way to a non-recreational use will require the approval of the National Park Service. Partnering with Cherry Creek State Park during the project development for the sidewalk connection in the northwest corner of the Parker Road and Quincy Avenue intersection will be important to minimize park impacts and to streamline project implementation.

**Hazardous Materials**

A hazardous materials review provided information about properties within the study area that pose a potential risk of environmental contamination from hazardous materials. Five potential hazardous material sites may have right-of-way impacts by the recommended improvements, all surrounding the Parker Road and Quincy Avenue intersection. Site types include fueling stations and dry cleaners, a public storage facility (potential exists for methamphetamine lab activity), and automotive maintenance and refinishing.
facilities. It appears that all of the sites would require minimal right-of-way along the roadway edge with partial right-of-way acquisition. However, access modifications may be identified during design that may increase right-of-way impacts.

The most fundamental, but often not feasible, management for hazardous materials is to avoid activities within contaminated sites. Wherever possible, responsibilities for known hazardous materials issues at properties targeted for right-of-way should be resolved prior to acquisition. It is not anticipated that buildings with hazardous materials will be demolished with the study recommendations, so an Asbestos Abatement Plan and a Lead-Based Paint Assessment Plan are assumed to not be required.

A hazardous materials assessment, such as a Modified Phase I Environmental Site Assessment, would typically be needed during future project development as part of the NEPA process. A more detailed hazardous material assessment would provide information to plan for known and potential hazardous materials and contaminated sites. During the NEPA and design process, this information can be used to identify avoidance options, when possible, and to assist with the development of specific contaminated soils/groundwater material management or mitigation measures. Properties to be acquired may also require individual site assessments and/or preliminary site investigations as part of the right-of-way acquisition process, and may require remediation prior to acquisition or development.

**Noise**

Projects on CDOT roadways or that have federal or state funding may require a traffic noise analysis, depending on the type of improvements. The noise analysis compares future noise levels to the CDOT Noise Abatement Criteria (NAC) for different types of land uses. The primary activity category in the study area is Category B, which is residential. Areas of potential concern for noise impacts include Cherry Creek State Park and the neighborhoods located adjacent to Quincy Avenue east of Parker Road. However, the residential neighborhoods have existing walls along Quincy Avenue and the recommended improvements do not move the vehicular travel lanes substantially closer to sensitive receivers. Therefore, the recommendations are expected to have minimal impacts to the noise levels adjacent to the project.

A detailed noise study may be conducted during future NEPA processes. The noise analysis should be performed to evaluate noise-sensitive sites that may be impacted by the alternative in accordance with the requirements of 23 CFR §772, “Procedures for Abatement of Highway Traffic Noise and Construction Noise,” using methodology established by CDOT in their Noise Analysis and Abatement Guidelines. Typically, any receivers within 500 feet of the roadway are included in the analysis to ensure that they will not exceed the NAC threshold. The appropriate FHWA Traffic Noise Model should be used to predict existing and design-year traffic noise levels and determine if mitigation may be required.

For noise mitigation to be recommended as part of the project, it must be considered both “reasonable and feasible” based on CDOT criteria. Noise mitigation is feasible if it can be constructed without major engineering or safety issues and provides a substantial noise reduction to the adjacent receivers. Reasonableness deals with whether the barrier can be designed to achieve a noise reduction design goal of seven decibels, whether the barrier can be constructed in a cost-efficient manner, and the desires of the community. All three of these criteria must be met for a barrier to be considered reasonable to construct.

**Biological Resources**

**Wetlands**

Cherry Creek, its tributaries, including Shop Creek at the southern end of the study area, and several wetlands and ponds connected to the tributaries, are likely “waters of the United States” and therefore under the jurisdiction of the US Army Corps of Engineers (USACE). A permit under Section 404 of the Clean
Water Act would be required to authorize any placement of dredge or fill material in these waters. It is not anticipated that the recommended improvements will impact these waters, so a Section 404 permit is assumed to not be required.

A desktop assessment followed by a reconnaissance field visit should be performed during future project development as part of the NEPA process to confirm the presence of the previously mentioned water-related feature and to identify any additional potential water-related resources that were not identified during the desktop survey.

Impacts to wetlands should be avoided where feasible. If avoidance is not feasible, and based on the size of the impacts, wetlands may need to be assessed using CDOT’s Functional Assessment of Colorado Wetlands (FACWet) method. The FACWet method considers three main variables: buffer and landscape context, hydrology, and abiotic and biotic characteristics. It is intended to help rate the functioning and condition of wetlands during the Section 404 permitting process, before a mitigation action, or after its completion.

Due to their importance, impacts to water-related resources should be avoided and minimized. If avoidance is not feasible, best management practices should be implemented to reduce direct and indirect impacts to these resources. Impacts to water-related resources should be permitted under a USACE Section 404 Nationwide or Individual permit, depending on size and scope of the project. Only the USACE has the authority to make final determinations regarding jurisdiction, permitting, and mitigation. CDOT mitigates all wetland impacts at a 1:1 ratio (up to or equal to USACE mitigation, not in addition) regardless of USACE jurisdictional status, or mitigation requirements.

**Threatened and Endangered Species**

Given the developed nature of the study area, the likelihood of presence of any threatened and endangered species is low. While the majority of the Denver Metropolitan area is included in the block clearance for Preble’s Meadow Jumping Mouse, a federally threatened species, Cherry Creek upstream of Cherry Creek Reservoir is not included in this clearance. Parker Road is the boundary for the block clearance on the east side of Cherry Creek, which should be taken into account when assessing potential impacts with future project development.

A desktop assessment followed by a reconnaissance field visit should be performed to confirm the potential presence of threatened and endangered species in the study area. During future project development as part of the NEPA process, the compiled special-status species lists should be reviewed with further consultation with the USFWS and CPW. Detailed surveys for suitable habitat for the federally and state-listed species may need to be conducted during an on-site reconnaissance survey. If suitable habitat for one or more of these species does occur in the study area, species-specific surveys may be required with USFWS consultation.

**Construction Phasing Considerations**

The potential phasing during construction of the recommended improvements was evaluated to identify opportunities and constraints.

- At Parker Road and Quincy Avenue Intersection
  - Relocation of traffic signal pole in northeast corner will need to occur prior to construction of the westbound triple left turn. A temporary traffic signal may be required for intersection construction.
  - Majority of the new westbound triple right turn lanes can be constructed outside of traffic.
Once traffic is shifted to new westbound triple right turn lanes, the new island can be constructed with night-time lane closures.

Night-time lane closures can be utilized for the median and full depth pavement construction.

Pavement overlay can be completed with night-time lane closures.

If concrete pavement reconstruction is required at intersection, possible weekend closures and high-early strength concrete will be required.

### Along Parker Road

- If concrete lane reconstruction is required due to sidewalk and curb & gutter reconstruction north of Quincy Avenue, Parker Road lanes can be reduced and shifted to the west to maintain existing number of lanes.
- Reconstructed driveways can be constructed in sections to maintain business access.
- Closure of the southbound Parker Road outside lane may be required during sidewalk construction on the west side, south of Quincy Avenue.
- Closure of northbound Parker Road outside lane required during sidewalk construction on the east side, south of Quincy Avenue.

### Along Quincy Avenue

- Closure of the westbound Quincy Avenue outside lane may be required during sidewalk and curb & gutter construction or the median may be removed to shift lanes to the south during construction.
- Pavement mill and overlay can be completed with night-time lane closures.

### At Quincy Avenue and Smoky Hill Road Intersection

- Southbound Carson Street full depth reconstruction can be completed with short-term closure and traffic detour to Dillon Way.
- Southbound Carson Street curb & gutter construction will require Carson Street to be reduced to one lane temporarily, or full closure with detour to Dillon Way.
- Modifications to southwest and southeast corners will require relocation of traffic signal poles. A temporary traffic signal may be required for intersection construction.
- Modifications of the northbound Smoky Hill Road to eastbound Quincy right turn lane and island can be done with short-term lane closures if full depth construction is required.
- Eastbound Quincy Avenue right turn lane curb & gutter construction can be completed with traffic maintained.
- Full depth pavement reconstruction can be completed in two phases with weekend closures in order to not impact weekday peak hour traffic.
APPENDIX A

LEVEL 1 SCREENING MATRIX
### Level 1 Screening Matrix

#### Parker Road and Quincy Avenue Intersection

<table>
<thead>
<tr>
<th>Category</th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
<th>A4</th>
<th>A5</th>
<th>A6</th>
<th>A7</th>
<th>A8</th>
<th>A9</th>
<th>A10</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Action</td>
<td>SB Left Turn Signal Progression</td>
<td>No Change in excessive queue lengths along Parker and Quincy</td>
<td>No Providing more time to pedestrian crossing</td>
<td>No Providing protected phase takes time from higher-volume movements</td>
<td>No Providing protected phase takes time from higher-volume movements</td>
<td>No Likely no change in pedestrian interval</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Traffic Congestion: Does the alternative reduce queuelengths along Quincy Avenue between Parker Road and Smoky Hill Road?</td>
<td>No Change in excessive queue lengths along Parker and Quincy</td>
<td>No Providing more time to pedestrian crossing</td>
<td>No Providing protected phase takes time from higher-volume movements</td>
<td>No Providing protected phase takes time from higher-volume movements</td>
<td>No Providing protected phase takes time from higher-volume movements</td>
<td>No Likely no change in pedestrian interval</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Intersection Operations: Does the alternative improve the level of service or reduce overall delay at the study area signalized intersections?</td>
<td>No Improvements to level of service or delay at intersections</td>
<td>Yes</td>
<td>No Providing more time to pedestrian crossing</td>
<td>No Providing protected phase takes time from higher-volume movements</td>
<td>No Providing protected phase takes time from higher-volume movements</td>
<td>No Likely no change in pedestrian interval</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Safety: Does the alternative provide multimodal safety improvements along Quincy Avenue and/or Parker Road?</td>
<td>No Improvements to vehicular or ped/bike safety</td>
<td>NO Minimal benefits to vehicular safety and no ped/bike safety improvements</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Near Term Implementation: Can the alternative be implemented in the near term within anticipated funding opportunities and required clearances?</td>
<td>N/A</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO Widening median would likely require substantial ROW</td>
<td>YES</td>
<td>Yes</td>
<td>Yes</td>
<td>NO Loop would require substantial ROW in SW quadrant</td>
<td>YES</td>
</tr>
<tr>
<td>Summary of Results</td>
<td>Carried Forward Baseline comparison</td>
<td>Carried Forward</td>
<td>Eliminated as a Stand Alone</td>
<td>Eliminated as a Stand Alone</td>
<td>Eliminated as a Stand Alone</td>
<td>Eliminated as a Stand Alone</td>
<td>Carried Forward</td>
<td>Carried Forward</td>
<td>Carried Forward</td>
<td>Carried Forward</td>
</tr>
<tr>
<td>Notes</td>
<td>Expected to reduce queues along Quincy and Smoky Hill Road operations, and provide minimal vehicular safety benefits within near term funding</td>
<td>Expected to reduce congestion or improve vehicular operations, but may be considered as an element of another alternative to provide multimodal safety benefits</td>
<td>Not expected to reduce congestion or improve vehicular operations, but may be considered as an element of another alternative to provide vehicular safety benefits</td>
<td>Not expected to reduce congestion or improve vehicular operations, but may be considered as an element of another alternative to provide vehicular safety benefits</td>
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</tr>
</tbody>
</table>

#### Notes

- No Action alternative carried forward to provide baseline for identifying improvements
- Expected to reduce queues along Quincy and Smoky Hill Road operations, and provide minimal vehicular safety benefits within near term funding
- Expected to reduce congestion or improve vehicular operations, but may be considered as an element of another alternative to provide multimodal safety benefits
- Not expected to reduce congestion or improve vehicular operations, but may be considered as an element of another alternative to provide vehicular safety benefits
- Not expected to reduce congestion or improve vehicular operations, but may be considered as an element of another alternative to provide vehicular safety benefits
- Not expected to reduce congestion or improve vehicular operations, but may be considered as an element of another alternative to provide vehicular safety benefits
- Does not meet project goals because it is not expected to reduce congestion, improve operations, or provide notable safety improvements within near term funding
- Safety concerns may increase with most/bike attempting to cross, but may be considered as an element of another alternative facilitating ped/bike crossings at alternate locations
- Expected to reduce queues along Quincy and Smoky Hill Road operations, and provide minimal vehicular safety benefits within near term funding
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- Expected to reduce queues along Quincy and Smoky Hill Road operations, and provide minimal vehicular safety benefits within near term funding
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- Expected to reduce queues along Quincy and Smoky Hill Road operations, and provide minimal vehicular safety benefits within near term funding
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- Expected to reduce queues along Quincy and Smoky Hill Road operations, and provide minimal vehicu...
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<th>B3</th>
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</thead>
<tbody>
<tr>
<td>Traffic Congestion: Does the alternative reduce queue lengths along Quincy Avenue between Parker Road and Smoky Hill Road?</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Interception Operations: Does the alternative improve the level of service or reduce overall delay at the study area signalized intersections?</td>
<td>NO</td>
<td></td>
<td>YES</td>
<td></td>
<td></td>
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<tr>
<td>Safety: Does the alternative provide multimodal safety improvements along Quincy Avenue and/or Parker Road?</td>
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<td>YES</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Near Term Implementation: Can the alternative be implemented in the near term within anticipated funding opportunities and required clearances?</td>
<td>N/A</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
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</tr>
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</table>

**Summary of Results**

- Carried Forward
- Baseline comparison
- Carried Forward
- Eliminated as a Stand Alone
- Carried Forward
- Carried Forward
- Carried Forward

**Notes**

- No Action alternative carried forward to provide baseline for identifying improvements
- Expected to reduce queues along Quincy, improve vehicular operations, and provide multimodal safety benefits within near term funding
- Not expected to reduce congestion or improve vehicular operations, but may be considered as an element of another alternative to provide vehicular safety benefits
- Expected to reduce queues along Quincy, improve vehicular operations, expected to be within near term funding
- Expected to reduce queues along Quincy, improve vehicular operations, expected to be within near term funding
- Expected to reduce queues along Quincy, improve vehicular operations, and provide multimodal safety benefits, but ROW required may increase funding needed beyond the near term

**Level 1 Screening Matrix**

Quincy Avenue and Smoky Hill Road Intersection

12/8/2015

**Notes**

- No change in excessive queue lengths along Parker and Quincy
- Providing protected phase takes time from higher-volume movements and increases queuing along EB Quincy
- No improvements to level of service or delay at intersections
- Providing protected phase takes time from higher-volume movements and increases the delay for EB Quincy
- No improvements to vehicular or ped/bike safety
- No minimal benefits to vehicular safety and no ped/bike safety improvements
- Widening may require substantial ROW around intersection
<table>
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<th>C2</th>
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<tr>
<td>Traffic Congestion: Does the alternative reduce queue lengths along Quincy Avenue between Parker Road and Smoky Hill Road?</td>
<td>NO</td>
<td>No change in excessive queue lengths along Parker and Quincy</td>
<td>NO</td>
<td>Reduced area for vehicle queues would increase overall queue lengths</td>
<td>NO</td>
<td>Reduced area for vehicle queues would increase overall queue lengths</td>
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</tr>
<tr>
<td>Intersection Operations: Does the alternative improve the level of service or reduce overall delay at the study area signalized intersections?</td>
<td>NO</td>
<td>No improvements to level of service or delay at intersections</td>
<td>NO</td>
<td>No improvements to level of service or delay at signalized intersections</td>
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<td>No improvements to level of service or delay at signalized intersections</td>
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<tr>
<td>Safety: Does the alternative provide multimodal safety improvements along Quincy Avenue and/or Parker Road?</td>
<td>NO</td>
<td>No improvements to vehicular or ped/bike safety</td>
<td>NO</td>
<td>Potential for added safety concern with false sense of security for side street drivers</td>
<td>YES</td>
<td>Potential for added safety concern with false sense of security for side street drivers</td>
<td>YES</td>
</tr>
<tr>
<td>Near Term Implementation: Can the alternative be implemented in the near term within anticipated funding opportunities and required clearances?</td>
<td>N/A</td>
<td>NO</td>
<td>Sidewalk construction would likely require substantial ROW and walls</td>
<td>NO</td>
<td>Sidewalk construction would likely require substantial ROW and walls</td>
<td>NO</td>
<td>Widening may require substantial ROW along Quincy</td>
</tr>
<tr>
<td>Summary of Results</td>
<td>Carried Forward</td>
<td>Baseline comparison</td>
<td>Eliminated as a Stand Alone</td>
<td>Eliminated as a Stand Alone</td>
<td>Eliminated as a Stand Alone</td>
<td>Eliminated as a Stand Alone</td>
<td>Eliminated as a Stand Alone</td>
</tr>
</tbody>
</table>

**Notes**
- No Action alternative carried forward to provide baseline for identifying improvements
- Not expected to reduce congestion or improve vehicular operations or safety, but may be considered as an element of another alternative within near term funding
- Not expected to reduce congestion or improve vehicular operations, but may be considered as an element of another alternative within near term funding
- Not expected to reduce congestion or improve vehicular operations, but may be considered as an element of another alternative to facilitate ped/bike crossings at locations away from Parker/Quincy signal
- Not expected to reduce congestion or improve vehicular operations, but may be considered as an element of another alternative to facilitate ped/bike crossings at locations away from Parker/Quincy signal
- Required ROW may increase funding beyond the near term, but may be considered as an element of another alternative to provide added congestion reduction and operational improvements
- Does not meet project goals because it is not expected to reduce congestion or improve vehicular operations and ROW required may increase funding needed beyond the near term
APPENDIX B

LEVEL 2 SCREENING MATRIX
### Comparative (Level 2) Screening Matrix

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>No Action</strong></td>
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<td></td>
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<td><strong>Parker/Quincy</strong></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>2020: LOS E</td>
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<tr>
<td>2040: LOS D</td>
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</tr>
<tr>
<td><strong>Quincy/Smoky Hill</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2020: LOS E</td>
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<td>2040: LOS F</td>
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</tbody>
</table>

### Summary

**SUMMARY**

<table>
<thead>
<tr>
<th>Interventions 2020 and 2040 peak hour level of service (LOS) (2040 PM)</th>
<th>Interventions 2020 and 2040 peak hour capacity for intersection major movements (accl)</th>
<th>2020 and 2040 peak hour queue lengths (feet)</th>
<th>2020 and 2040 percent of volume served</th>
<th>Pedestrian/Bicycle LOS at major intersections</th>
<th>Pedestrian/Bicycle LOS at minor and pedestrian conflicts</th>
<th>Safety</th>
</tr>
</thead>
</table>

**Notes:**

- RED = Comparatively minor or no benefits and/or major impacts
- ALE = Comparatively minor benefits and/or moderate impacts
- RED = Comparatively minor or no benefits and/or major impacts

**SUMMARY**

- decrease conflict of turning vehicles with removal of crossing across Parker and across Quincy at Smoky Hill.
- increases pedestrian/bicyclist comfort and safety crossing south leg.
- decreases conflict of turning vehicles with removal of crossing across Quincy Avenue at Smoky Hill.
- increase right turn lane at Parker increases conflict with pedestrians crossing free movement and higher EB left turn speeds at Smoky Hill decreases pedestrian/bicyclist comfort and safety crossing south leg.
- increases conflict of turning vehicles with removal of crossing across Quincy Avenue at Smoky Hill.

**SUMMARY**

- decrease conflict of turning vehicles with removal of crossing across Quincy Avenue at Smoky Hill.
- increase right turn lane at Parker increases conflict with pedestrians crossing free movement and higher EB left turn speeds at Smoky Hill decreases pedestrian/bicyclist comfort and safety crossing south leg.
- increases conflict of turning vehicles with removal of crossing across Quincy Avenue at Smoky Hill.
- increase right turn lane at Parker increases conflict with pedestrians crossing free movement and higher EB left turn speeds at Smoky Hill decreases pedestrian/bicyclist comfort and safety crossing south leg.
- increases conflict of turning vehicles with removal of crossing across Quincy Avenue at Smoky Hill.
- increase right turn lane at Parker increases conflict with pedestrians crossing free movement and higher EB left turn speeds at Smoky Hill decreases pedestrian/bicyclist comfort and safety crossing south leg.

**SUMMARY**

- decrease conflict of turning vehicles with removal of crossing across Quincy Avenue at Smoky Hill.
- increase right turn lane at Parker increases conflict with pedestrians crossing free movement and higher EB left turn speeds at Smoky Hill decreases pedestrian/bicyclist comfort and safety crossing south leg.
- increases conflict of turning vehicles with removal of crossing across Quincy Avenue at Smoky Hill.
- increase right turn lane at Parker increases conflict with pedestrians crossing free movement and higher EB left turn speeds at Smoky Hill decreases pedestrian/bicyclist comfort and safety crossing south leg.
### Comparative (Level 2) Screening Matrix

<table>
<thead>
<tr>
<th>Level 2 Evaluation Criteria</th>
<th>No Action</th>
<th>Pedestrian/Bicyclist Movements</th>
<th>Signing and Signal Modifications</th>
<th>Added Turn Lanes</th>
<th>Added Turn Lanes with Signal Phasing Modifications</th>
<th>Added Turn Lanes with Quincy Widening</th>
<th>Southbound Parker 3-Lane Road</th>
<th>Summary</th>
</tr>
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<tbody>
<tr>
<td>Connections for area pedestrian/bicyclist movements</td>
<td>Relatively high volume of pedestrian/bicyclist movements on south side of Quincy Avenue</td>
<td>Connection across Parker is uncomfortable due to high vehicle volumes and turning movements.</td>
<td>Pedestrian/Bicyclist Movements with Signing and Signal Modifications</td>
<td>Increased volume of crossing across Quincy Avenue at Smoky Hill decreases access for pedestrian/bicyclists.</td>
<td>Connection across Parker is uncomfortable due to high vehicle volumes and turning movements.</td>
<td>Elimination of crossing across Quincy Avenue at Smoky Hill decreases access for pedestrian/bicyclists.</td>
<td>Elimination of crossing across Quincy Avenue at Smoky Hill decreases access for pedestrian/bicyclists.</td>
<td>Five potential hazardous materials sites</td>
</tr>
<tr>
<td>Travel mode interconnectivity</td>
<td>Pedestrians/bicyclists have access to bus stops along Parker Road at Quincy Avenue.</td>
<td>Increased sidewalk width and access along Quincy Avenue decreases access for pedestrian/bicyclists.</td>
<td>Pedestrian/Bicyclist Movements with Signing and Signal Modifications</td>
<td>Increased volume of crossing across Quincy Avenue at Smoky Hill decreases access for pedestrian/bicyclists.</td>
<td>Connection across Parker is uncomfortable due to high vehicle volumes and turning movements.</td>
<td>Elimination of crossing across Quincy Avenue at Smoky Hill decreases access for pedestrian/bicyclists.</td>
<td>Elimination of crossing across Quincy Avenue at Smoky Hill decreases access for pedestrian/bicyclists.</td>
<td>Five potential hazardous materials sites</td>
</tr>
<tr>
<td>Potential environmental impacts and required clearances</td>
<td>N/A</td>
<td>None</td>
<td>Four potential hazardous material sites</td>
<td>Four potential hazardous material sites</td>
<td>Four potential hazardous material sites</td>
<td>Four potential hazardous material sites</td>
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<td>Five potential hazardous materials sites</td>
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<tr>
<td>Right-of-Way required (acres)</td>
<td>0.02 acres</td>
<td>0.03 acres</td>
<td>0.02 acres</td>
<td>0.04 acres</td>
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<td>Residential: 1 property</td>
<td>Residential: 1 property</td>
<td>Residential: 1 property</td>
<td>Residential: 1 property</td>
<td>Residential: 1 property</td>
<td>Residential: 1 property</td>
<td>Residential: 1 property</td>
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<tr>
<td>Access modifications</td>
<td>No access modifications with increased access control west side of Parker Road south of Quincy</td>
<td>None</td>
<td>None</td>
<td>Access modifications at shopping center south access on Parker Road north of Quincy</td>
<td>Access modifications at shopping center south access on Parker Road north of Quincy</td>
<td>Widening Quincy Avenue to north may require more property impacts</td>
<td>Widening Quincy Avenue to north may require more property impacts</td>
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<tr>
<td>Implementability</td>
<td>Sidewalk improvements north of Quincy Avenue may require walls and substantial residential fence modifications.</td>
<td>No substantial issues</td>
<td>No substantial issues</td>
<td>Widening Quincy Avenue to north may require short walls to minimize property impacts.</td>
<td>Widening Quincy Avenue to north may require short walls to minimize property impacts.</td>
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<td>Widening Quincy Avenue to north may require walls to minimize property impacts.</td>
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<tr>
<td>Relate construction costs base = $1 M</td>
<td>Moderate = $1 M - $3 M</td>
<td>High = $3 M - $5 M</td>
<td>Very High = $5 M</td>
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<td>Parker/Quincy: Low</td>
<td>Parker/Quincy: Low</td>
<td>Parker/Quincy: Low</td>
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<td>Not recommended</td>
<td>Further consideration required</td>
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<td>Further consideration required</td>
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<td>N/A</td>
</tr>
<tr>
<td>Notes</td>
<td>Further analysis is not recommended for comparison to recommended improvement. This alternative is not recommended for further consideration because it does not impact any significant or complete 啪小麦</td>
<td>This alternative is not recommended for further consideration because it does not impact any significant or complete 啪小麦</td>
<td>This alternative is not recommended for further consideration because it does not impact any significant or complete 啪小麦</td>
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<td>This alternative is not recommended for further consideration because it does not impact any significant or complete 啪小麦</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**SUMMARY**

- **Parker/Quincy: Low**
- **Parker/Quincy: Moderate**
- **Parker/Quincy: High**
- **Quincy/Smoky Hill: Low**
- **Quincy/Smoky Hill: Moderate**
- **Quincy/Smoky Hill: High**
- **Overall: Low**
- **Overall: Moderate**
- **Overall: High**
- **N/A**
- **Not recommended**
- **Further consideration required**
- **Not recommended for comparison to recommended improvement**
## Comparative (Level 2) Screening Summary

<table>
<thead>
<tr>
<th>Level 2 Evaluation Criteria</th>
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<th>1</th>
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</tbody>
</table>

### SUMMARY OF RESULTS

- **CARRIED FORWARD**: Alternative will be evaluated further with conceptual design as a potential improvement project.
- **NOT RECOMMENDED**: Alternative will not be evaluated further in the study due to comparatively negligible benefits and major impacts.

### Notes

- **Further analysis as the No Action Alternative for comparison to recommended improvements.**
- **This alternative is not recommended for further consideration because it does not reduce congestion or provide adequate operational performance benefits at the study area intersections and impacts area pedestrian and bicyclist connectivity.**
- **This alternative is carried forward as a potential improvement project because it reduces delay and queue lengths at the study area intersections with a relatively low to moderate cost.**
- **This alternative is not recommended for further consideration because it does not reduce congestion or provide adequate operational performance benefits at the study area intersections.**
- **This alternative is carried forward as a potential improvement project because it would result in comparably higher property impacts and relatively high cost without substantially better traffic operations and safety benefits.**

- **Comparatively beneficial and/or minor impacts**
- **Comparatively neutral benefits and/or moderate impacts**
- **Comparatively minor or no benefits and/or major impacts**

- **CARRIED FORWARD**: Alternative will be evaluated further with conceptual design as a potential improvement project.
- **NOT RECOMMENDED**: Alternative will not be evaluated further in the study due to comparatively negligible benefits and major impacts.
APPENDIX C
TECHNICAL MEMORANDUMS
MEMORANDUM

Date: September 8, 2016
To: Stacy Tschuor, P.E., PTOE
Organization: David Evans and Associates, Inc.
From: Geneva Hooten, AICP; Sonia Dubielzig
Project: Parker Road/Quincy Avenue/Smoky Hill Road Intersection Improvement Study
Re: Recommended Wayfinding Improvements

Background
Wayfinding signs provide information about destinations and direction to help people determine the best routes to take to major destinations, often without the use of a map. Wayfinding:

- Creates a sense of welcome and access,
- Helps people navigate to and from their destinations as easily as possible, and
- Helps people understand the resources available and how to get to them.

This memorandum provides a brief overview of the wayfinding needs specifically for bicyclists and pedestrians within the Quincy Avenue corridor, the existing plans relevant to the City of Aurora and Arapahoe County, and recommended wayfinding signage locations, sign assembly type, panel type, and legends. The intent of this memorandum is to provide a recommended set of wayfinding signage in conjunction with the study’s recommended improvements as a means to increase accessibility and improve users’ experience within the corridor.

Wayfinding Needs
There are currently two pedestrian and bicycle wayfinding signs within the study area, both located at the intersection of Quincy Avenue and the western shopping centers: 7-Eleven to the south and Denver Mattress to the north. The signage reads “PEDS/BIKES TO CHERRY CREEK STATE PARK CROSS HERE” to alert users that the only pedestrian crossing of Parker Road is on the southern leg of Quincy Avenue. This signage will no longer be relevant once the planned improvements are constructed.
The existing non-motorized travel patterns within the study area shown in Figure 1 are expected to change slightly due to the study’s recommendations. Once complete, all non-motorized travel will be directed across a new marked crosswalk on the north leg of the Parker Road/Quincy Avenue intersection and the existing marked crosswalk across the southern leg of Parker Road will be closed. Additionally, sidewalk improvements will enhance access to the park:

- The sidewalk on the northern side of Quincy Avenue will be widened to 10 feet,
- A new 12 foot sidewalk will be constructed on the east side of Parker Road south of Quincy, and
- The western sidewalk of Parker Road will be widened to 12 feet.

The routing changes, in combination with a lack of existing wayfinding today, demonstrate a clear need for enhanced wayfinding signage to help users navigate the new design to access the park. Signage may also help attract more people to walk and bike within the study area.

**Figure 1 Pedestrian and Bicycle Travel Patterns**
Plan Review
Several adopted plans already provide guidance on the development and implementation of wayfinding within the study area.

- The *Aurora Bicycle and Pedestrian Master Plan* (2012) includes a Wayfinding Protocol and Best Practices manual to promote walking and bicycling. This manual provides guidance for establishing a comprehensive bicycle wayfinding system, as well as best practices for pedestrian wayfinding. These guidelines formed the basis of the wayfinding recommendations included in this memo.

- The *Nine Mile Station Wayfinding Plan* (2015) was commissioned because visitors and residents could not easily find the Nine Mile light rail station. As a result, pedestrians often crossed Parker Road at uncontrolled mid-block locations. The conceptual plan included a variety of directional, or “finger” signs, which are designed to be legible by both pedestrian and drivers. This plan is also consistent with the Aurora Bicycle and Pedestrian Plan Wayfinding Protocol and Best Practices manual.

- The *Parker Road Corridor Study* (2009) identified wayfinding signage as a key component in realizing the Study’s recommendations, which were carried forward into this study.

- The *City of Aurora Comprehensive Plan* (2009) and *Arapahoe County 2035 Transportation Plan* (2010) both outline goals and strategies to improve walking and bicycling and state the need for enhanced wayfinding signage.

Recommended Wayfinding Signage
Due to the high traffic volumes and speeds along Parker Road (85,500 Average Daily Traffic [ADT] north of Quincy Avenue, 45 mph; 56,400 ADT south of Quincy Avenue, 55 mph) and Quincy Avenue (41,200 ADT, 40 mph), even the most confident bicyclists will use the sidewalks along these two streets. Therefore, the wayfinding system is designed for pedestrians and bicyclists who are sharing these facilities. The wayfinding sign assemblies proposed are consistent with walking speeds, assuming that they will be used mainly by pedestrians or bicyclists who are biking relatively slowly on the sidewalk.

The primary non-motorized travel movements within the corridor are between the Cherry Creek State Park and Chambers Road, with Parker Road/Quincy Avenue serving as the main access points for surrounding residential and commercial areas (see Figure 1). Quincy Avenue/Smoky Hill Road is the other key intersection within the study area as it connects two neighborhoods to parks, commercial activities, and schools. These intersections are the focus of the wayfinding recommendations outlined below.
General Sign System Components

The following three signage types comprise the wayfinding signage recommended within the study area, though finger signs are appropriate at the majority of locations. Only at the entrance to and within Cherry Creek State Park are other signage types (an entry sign and map kiosk) recommended.

- **Finger signs**: Finger signs provide information for pedestrians at decision points. Typically, finger signs include direction, destination and distance information. Finger signs are oriented around a central post and point in the direction of travel. Finger signs can help pedestrians and bicyclists determine which way to travel as they proceed through an intersection. These signs are recommended at multiple locations throughout the corridor.

- **Map kiosks**: Of the various wayfinding devices, maps provide the most information to the user. They can show all possible routes and destinations in a prescribed area and provide a snapshot understanding of the area. A map kiosk is recommended at the beginning of Parker Road Trail within Cherry Creek State Park.

- **Entry signs**: Entry signs tell the user they have arrived at a location. Within a wayfinding system, it is best to have finger signs directing users to locations and then clearly marked signage alerting users to those locations once they have arrived. An entry sign is recommended at the northwestern corner of Parker Road and Quincy Avenue near the entrance to the park.

The recommended sign assemblies and sign placements are consistent with the pedestrian wayfinding scheme proposed for the Nine Mile transit station (see Figure 2). More broadly, these recommendations are consistent with the City’s overall wayfinding system, an objective of the Wayfinding Protocol and Best Practices manual.

Figure 3 shows the location for recommended signage while Table 1 explains the purpose, signage type, and any additional notes.
Sign Types and Design

Objectives:
- Provide easy orientation for visitors and direct pedestrians when they arrive at the Nine Mile station
- Utilize recognizable icons and bright colors that highlight directions and increase the sign’s visibility

Design Criteria:
- Double sided directional signs provide highly visible, easy to decipher signage
- Both text and graphic icons are to be used
- Signs oriented to the pedestrian with height and scale and that makes the signs visible
- Signs are set back from the curbs on Parker Road

Form:
The signs consist of directional (or “finger”) signs, and bollards with attached signage. Color is the main element that provides customization for the signs. The directional sign is proposed to be a rectangle, with a specific color for each use:

- Nine Mile Station— Red (Pantone 7599)
- Hotel— Blue (Pantone 7709)
- Retail— Purple (Pantone 267)
- Cherry Creek State Park— Brown (Pantone 463)
- Cherry Creek Trail— Green (Pantone 7468)
- Hotel and Retail— Blue (Pantone 7709)
- RTD Buses— Red (Pantone 7599)
- Poles on top of pole— Gold (Pantone 7409, Gloss finish)

Materials:
- Painted metal with applied reflective vinyl graphics and lettering
- Poles and bollards to be powder coated, black color.

Design:
The concept designs are shown on the right.
Figure 3 Recommended Wayfinding Sign Locations
<table>
<thead>
<tr>
<th>Map ID#</th>
<th>Location</th>
<th>Panel 1</th>
<th>Panel 2</th>
<th>Panel 3</th>
<th>Comments/Notes</th>
</tr>
</thead>
</table>
| 1      | Parker Road southbound    |         |         |         | **Panel 1**
|        | N of Quincy Avenue        | SE      | Park Entry (minor) | Cherry Creek State Park | -
| 2      | Parker Road Trail         | S       | Orientation | Map Kiosk | Map of State Park | N/A | - | - | - | Place visible to pedestrians approaching from both northeast and southeast quadrants of crosswalk. Font size should be at least 6” high (visible up to 200 feet).
| 3      | Parker Road northbound    | S       | Directional | Finger, Brown background (Pantone 465) | ↑ Cherry Creek State Park | Finger, White background | Use Crosswalk | - | - | Perpendicular to #4. Possibly mount on same post as pedestrian signal activation button.
| 4      | Parker Road northbound    | E       | Directional | Finger, Brown background | Cherry Creek State Park | Finger, White background | Use Crosswalk | - | - | Perpendicular to #3. Possibly mount on same post as pedestrian signal activation button.
| 5      | Quincy Avenue right turn slip lanes | SE | Directional | Finger, Brown background | ↑ Cherry Creek State Park | Finger, White Background | Use Crosswalk | - | - | Back to back with #6 (make sign double-sided). Possibly mount on same post as pedestrian signal activation button.
| 6      | Quincy Avenue right turn slip lanes | NW | Directional | Finger, Brown background | Cherry Creek State Park | Finger, White Background | Use Crosswalk | - | - | Back to back to #5 (make sign double-sided). Possibly mount on same post as pedestrian signal activation button.
| 7      | Quincy Avenue westbound   | E       | Directional | Finger, Brown background | ↑ Cherry Creek State Park | - | - | - | - | Perpendicular to #8.
| 8      | Quincy Avenue westbound   | S       | Directional | Finger, Brown background | ← Cherry Creek State Park | - | - | - | - | Perpendicular to #7.
| 9      | Quincy Avenue eastbound   | E       | Directional | Finger, Brown background | Cherry Creek State Park | Finger, White Background | Cross here | - | - | Possibly mount on same post as traffic signals.
| 10     | Carson Street southbound  | N       | Directional | Finger, Brown background | Cherry Creek State Park | - | - | - | - | Perpendicular to #11.
| 11     | Carson Street southbound  | E       | Directional | Finger, Brown background | ↑ Cherry Creek State Park | Finger, Purple background (Pantone 267) | ↑ Retail | Finger, Brown background | Carson Park | Back to back with #12 (make Carson Park finger double-sided; perpendicular to #11.
| 12     | Carson Street southbound  | W       | Directional | N/A | N/A | N/A | N/A | Finger, Brown background | ← Carson Park | Back to back with #11 (Make Carson Park finger double-sided).
| 13     | Smoky Hill Road southbound | SE     | Directional | Finger, Brown background | ← Cherry Creek State Park | Finger, Purple background | ← Retail | Finger, Brown background | Carson Park | - |
| 14     | Smoky Hill Road northbound | SE     | Directional | Finger, Brown background | Cherry Creek State Park | Finger, Brown background | Carson Park | ← Retail | Finger, Brown background | Cross Quincy Ave | - |
| 15     | Parker Road northbound    | S       | Directional | Finger, Purple background | ↑ Retail | Finger, Brown background | ↑ Cherry Creek State Park | - | - | - |
| 16     | Parker Road northbound    | N       | Directional | Finger, Brown background | ↑ Cherry Creek State Park | - | - | - | - | - |
Sign Lettering and Contents

The Wayfinding Protocol and Best Practices manual in the *Aurora Bicycle and Pedestrian Master Plan* outlines several general rules for bicycle wayfinding sign components. These are best practice guidelines and should be considered during the fabrication and installation of the wayfinding assemblies recommended here. The following are general suggestions for sign contents:

- Use upper and lower case letters.
- Use Clearview Series C font because it strikes a balance between visibility and maximum characters per sign. This differs from the Colorado Department of Transportation (CDOT) standards yet is approved for use by the Federal Highway Administration.
- Use two-inch high capital letters. This size is visible from approximately 80 feet.
- For destination names that are too long to fit on one line, use intuitive abbreviations.
- Do not use periods in the abbreviations of destination names.
- Avoid the use of diagonal arrows when possible.
- Use graffiti film on bicycle route signs that are lower to the ground, particularly on trails. This will increase the longevity of the signs.

Implementation Considerations

While the majority of signage locations are within the City’s right-of-way, some coordination with property owners may be needed. Additionally, the City should coordinate with Colorado Parks and Wildlife for locating the map kiosk within park property. Other coordination with CDOT along Parker Road, a CDOT-owned facility, may be required.
MEMORANDUM

Date: September 8, 2016
To: Stacy Tschuor, P.E., PTOE
Organization: David Evans and Associates, Inc.
From: Geneva Hooten, AICP; Tom Huber
Project: Parker Road/Quincy Avenue/Smoky Hill Road Intersection Improvement Study
Re: Recommended Bicycle Count Technology

Background
Bicycle count data provides a wealth of information for planners and decision makers. Count data can show patterns of use and trends to help in the evaluation of new facilities. Building upon the count recommendations outlined in the 2012 Aurora Bicycle and Pedestrian Master Plan, the City of Aurora is interested in adding new bicycle count technology as part of the Parker Road/Quincy Avenue/Smoky Hill Road Intersection Improvement Study. Bicycle counting was included as a plan performance measure, with a target to double the number of bicyclists counted by 2017. This memorandum summarizes count technology options and installation considerations for the northwestern corner of the Parker Road/Quincy Avenue intersection.

Count Location
The northwestern corner of the Parker Road/Quincy Avenue intersection is an ideal location for a bicycle counter as it serves several destinations and is right at the entrance of Cherry Creek State Park, which provides access to the region’s greater trail network via the Cherry Creek Trail. Installing a count device at this location would enable the City of Aurora to capture data on the volume of bicyclists traveling between the neighborhood and park. Figure 1 shows the bicycle and pedestrian travel patterns within the study area. As shown, there are frequent east-west movements between Cherry Creek State Park...
and Chambers Road, with this intersection serving as the main access point for surrounding residential and commercial areas to the park.

West of Parker Road, Quincy Avenue terminates by the park. The study's recommendations will redirect all non-motorized travel across a new marked crosswalk on the north leg of the intersection and the existing southern crosswalk across Parker Road will be closed. As a result, all pedestrians and bicyclists will pass through the proposed count location to access the park.

Figure 1 Pedestrian and Bicycle Travel Patterns
Bicycle and Pedestrian Count Technology

Selecting a device to count non-motorized users largely depends on who is being counted, the type of bicycle or pedestrian facility being considered for a counter, and site attributes. Table 1 summarizes currently available technologies for collecting pedestrian and bicycle volume data, based on the National Cooperative Highway Research Program (NCHRP) Report 797 - Bicycle Volume Data Collection. This table describes the bicycle count technology options available for the Parker Road/Quincy Avenue intersection. The green highlighted rows show the three technologies most appropriate for the study intersection and are described in more detail below.

Although this table provides a general overview on the types of count technologies available, there are some features and capabilities inherent to each technology that may be vendor-specific. Therefore, as new technologies are brought to market and existing count technologies are improved upon, the City of Aurora should stay informed of count innovations.
<table>
<thead>
<tr>
<th>Technology</th>
<th>User Detected</th>
<th>Type of Facility</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian and Bicycle Mixed</td>
<td>Pass</td>
<td>Pedestrian Only</td>
<td>Bicyclist Only</td>
</tr>
<tr>
<td>Passive infrared detectors</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Active infrared detectors</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Radio beam detectors</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Pneumatic tubes</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Inductive loop detectors</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Piezoelectric sensors</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Automated video</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Combination inductive loop/infrared detectors</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

Source: Adapted from National Cooperative Highway Research Program (NCHRP) Report 797 - Bicycle Volume Data Collection
Recommended Technologies
Two technologies are most relevant for this site: passive infrared detectors and inductive loop detectors, which can be used separately or in combination.

1. Passive infrared technologies count bicyclists and pedestrians by detecting the heat of passing users (see Figure 3).
2. Inductive loop detectors are a bicycle-specific technology that are imbedded into a travel way (e.g., a path or bike lane, see Figure 4). The sensors detect the presence of metal parts of bicycles.

Figure 3 Passive Infrared Counter, Cherry Creek Trail west of Holly Street, Denver, CO

Source: Colorado Department of Transportation

Figure 4 Inductive Loop Counter, Mason Trail, Fort Collins, CO

Source: Colorado Department of Transportation
Primary Recommendation: Passive Infrared Detection, with or without Inductive Loop Detection

A passive infrared detector is recommended for placement along the Parker Road Trail within Cherry Creek State Park property. Trails are excellent locations to take counts because users are funneled to one focused area. In this case, the passive infrared detector would capture all non-motorized users traveling to and away from the western leg of the Parker Road and Quincy Avenue intersection. Additionally, infrared detection is recommended for the following reasons:

- Ease of installation,
- Portability, and
- Cost-effectiveness — only a single unit is needed, which makes it relatively inexpensive, even for units that detect direction of travel.

Infrared counter sensors record both bicyclists and pedestrians and are therefore unable to distinguish between modes without the use of another technology, such as inductive loops, where the exact number of bicyclists can be extracted from the mixed traffic total. It is important to differentiate between pedestrians and bicyclists, even in areas with low volumes, to gather bicycle-specific data to meet the performance measure outlined in the City's Bicycle and Pedestrian Plan.

One consideration and potential challenge related to installation is in regard to the jurisdictional boundaries. The connecting trail, as it interfaces with Parker Road, is just outside the City of Aurora limits. Therefore, fostering a partnership with the Colorado Parks and Wildlife (CPW) would enable the City to use the count data to determine the flow of bicyclists and pedestrians from the City to the State Park.

Secondary Recommendation: Inductive Loop Detection

In the event that an agreement or partnership with CPW cannot be reached, the City should explore the installation of its own counter on or along Quincy Avenue. Inductive loop detectors can be embedded into the entrance of the path, but still in the sidewalk along Quincy Avenue just west of Parker Road (see Figure 2). Considerations for installation include the following:

- **Placement**: Placing the inductive loop counters in a location that is not easily bypassed will be critical for accuracy. The loops can be placed in the sidewalk at the entrance to the trail approximately 40 to 45 feet west from the existing truncated domes at the curb ramp. This would ensure that bicyclists will not be able to bypass the loops whether they access the trail from the sidewalk or from the street.

- **Jurisdictional Coordination**: The proposed placement of the inductive loop is within the street right-of-way, but is outside of the City’s boundaries. Therefore, this will require jurisdictional coordination with Arapahoe County.
Conclusion

There are several strategies for counting bicyclists at this corner of Parker Road and Quincy Avenue, each with benefits and challenges. Ultimately, the implementation of a permanent continuous counter will provide the most information about bicycle volumes and use. The primary recommendation of a passive infrared detector within the Park property would provide the best information about overall non-motorized volumes. However, this location may be more challenging to install and maintain due to jurisdictional constraints. The secondary consideration, for inductive loops, is provided in case the City cannot locate a counter directly on the trail.
APPENDIX D
CONCEPTUAL DESIGN PLANS
PARKER ROAD & QUINCY AVENUE
ROADWAY OPERATIONAL IMPROVEMENT STUDY
CITY OF AURORA
ARAPAHOE COUNTY, COLORADO

INDEX OF SHEETS

1 TITLE SHEET
2-5 TYPICAL SECTIONS
6-11 PLAN SHEETS
LEGEND:
- Pavement Depths are for cost estimating purposes only.
- Depths to be determined during final design.

PARKER ROAD & QUINCY AVENUE
TYPICAL SECTIONS
QUINCY AVE
**TYPICAL SECTIONS**

**QUINCY AVE.**

9/27/2016 9:58:12 AM

---

**PENN TABLE:**

**PLOT DRIVER:**

$\text{USER NAME}$

**PARKER ROAD & QUINCY AVENUE**

- **SMOKY HILL ROAD**
  - **ATCHISON WAY**
    - **SHOPPING CENTER ENTRANCE TO**
      - **LOOKING EAST**
        - **TURN LANE**
          - **SIDEWALK**
            - **RETAINING WALL**

- **CURB AND GUTTER**
  - **EXISTING PAVEMENT**
    - **3" HMA OVERLAY**
      - **35'**

**QUINCY AVENUE**

- **CURB AND GUTTER**
  - **EXISTING PAVEMENT**
    - **3" HMA OVERLAY**
      - **55'**

**LEGEND:**

- PAVEMENT DEPTHS ARE FOR COST ESTIMATING PURPOSES ONLY. DEPTHS TO BE DETERMINED DURING FINAL DESIGN.
APPENDIX E

SUMMARY OF PUBLIC COMMENTS
### PEDESTRIAN AND BICYCLIST INTERCEPT SURVEY RESULTS

**Date Conducted:** 11/7/15  
**Conducted by:** Toole Design Group  
**Weather:** Sunny and approximately 50 degrees  
**Location:** In between the NW corner of Parker/Quincy and the Cherry Creek Trail entrance

<table>
<thead>
<tr>
<th>Survey Time</th>
<th>Walk/Bike</th>
<th>Total Number In Group</th>
<th>Number Under 16 y.o.</th>
<th>Purpose</th>
<th>Park Vehicle Before Trip</th>
<th>Comfort at Intersection</th>
<th>Issues with Walking and Biking at Parker/Quincy</th>
<th>How Far Out of Your Way</th>
<th>Other Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:10 AM</td>
<td>Walk</td>
<td>2</td>
<td>0</td>
<td>Recreation</td>
<td>No</td>
<td>Comfortable</td>
<td>Signal timing</td>
<td>Would Not</td>
<td>Intersection is comfortable because of experience with intersection. The traffic is getting really heavy. A pedestrian overpass would be great.</td>
</tr>
<tr>
<td>11:10 AM</td>
<td>Walk</td>
<td>3</td>
<td>1</td>
<td>Recreation</td>
<td>No</td>
<td>Uncomfortable</td>
<td>Fast moving cars and bad drivers are concerns</td>
<td>Not far, less than a minute</td>
<td>Good luck on this project. It is needed.</td>
</tr>
<tr>
<td>11:26 AM</td>
<td>Bike</td>
<td>1</td>
<td>0</td>
<td>Recreation</td>
<td>Yes</td>
<td>Comfortable</td>
<td>Challenging with the amount traffic</td>
<td>Would just park at bike shop</td>
<td>The area is really busy.</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>Owner of Bike Shop</td>
<td>Bike</td>
<td>10</td>
<td>Recreation</td>
<td>Yes</td>
<td>N/A (Parked at shop)</td>
<td></td>
<td></td>
<td>It is a mess of an intersection. Left turn conflict is difficult (signal timing). I do not want to lose my business.</td>
</tr>
<tr>
<td>12:30PM</td>
<td>Bike</td>
<td>1</td>
<td>0</td>
<td>Recreation</td>
<td>No</td>
<td>Very Uncomfortable</td>
<td>High volume of traffic, disjointed (signal timing)</td>
<td>1/4 Mile</td>
<td></td>
</tr>
<tr>
<td>12:30 PM</td>
<td>Bike</td>
<td>1</td>
<td>0</td>
<td>Recreation</td>
<td>No</td>
<td>Uncomfortable</td>
<td>A lot of traffic in the intersection, failure to yield from the traffic</td>
<td></td>
<td>It is an overall mess.</td>
</tr>
<tr>
<td>12:45 PM</td>
<td>Bike</td>
<td>1</td>
<td>0</td>
<td>Recreation</td>
<td>No</td>
<td>Very Uncomfortable</td>
<td>Traffic fails to yield, signal timing</td>
<td>Temple</td>
<td>Would like grade separation. The ped crossings are dangerous due to failure to yield. Lehigh signal timing needs evaluated. Signal flips too easy and is not in coordination with other signals. Traffic backs up due to lack of coordination.</td>
</tr>
<tr>
<td>12:50 PM</td>
<td>Bike</td>
<td>1</td>
<td>0</td>
<td>Recreation</td>
<td>Yes</td>
<td>Very Uncomfortable</td>
<td>Traffic is too high to cross. Parked on west side of intersection to not have to cross the street.</td>
<td>If intersection gets worse, will have to</td>
<td></td>
</tr>
<tr>
<td>12:50 PM</td>
<td>Walk</td>
<td>1</td>
<td>0</td>
<td>Recreation</td>
<td>Yes</td>
<td>Uncomfortable</td>
<td>Some crashes, too busy</td>
<td>Yes, Lehigh or Temple</td>
<td>This is the worst intersection in the area.</td>
</tr>
<tr>
<td>12:17 PM</td>
<td>Walk</td>
<td>1</td>
<td>0</td>
<td>Recreation</td>
<td>No</td>
<td>Comfortable</td>
<td>Pavement condition needs upgrade</td>
<td>Yes, Would be more exercise</td>
<td>Would like more sidewalks, especially at southwest corner of intersection.</td>
</tr>
<tr>
<td>11:45 AM</td>
<td>Disabled Man in Recumbent Bike</td>
<td>Bike</td>
<td>8</td>
<td>0</td>
<td>Recreation</td>
<td>No</td>
<td>Dirt and debris an issue on sidewalks, Used to the intersection</td>
<td>Push buttons are too high for the recumbent bike.</td>
<td></td>
</tr>
<tr>
<td>11:40 AM</td>
<td>Walk</td>
<td>1</td>
<td>0</td>
<td>Recreation</td>
<td>Yes</td>
<td>Comfortable</td>
<td>20% of time cars come too close. Jaywalks to avoid the conflict. Left turns - most people stop but it’s uncomfortable.</td>
<td>Not far</td>
<td></td>
</tr>
<tr>
<td>11:52 AM</td>
<td>Bike</td>
<td>1</td>
<td>0</td>
<td>Recreation</td>
<td>No</td>
<td>Very Uncomfortable</td>
<td>Cars too fast, not paying attention, run the red light</td>
<td>Yes, Lehigh or Temple</td>
<td>Better signage for left turns to yield to pedestrians.</td>
</tr>
<tr>
<td>Date</td>
<td>Name</td>
<td>Method/ Bike</td>
<td>Total Number in Group</td>
<td>Number Under 14 y.o.</td>
<td>Purpose</td>
<td>Origin of Trip</td>
<td>Park Vehicle Before Trip</td>
<td>Comfort at Intersection</td>
<td>Issues with Walking and Biking at Park/Quincy</td>
</tr>
<tr>
<td>------------</td>
<td>--------------</td>
<td>--------------</td>
<td>-----------------------</td>
<td>----------------------</td>
<td>-----------------------------------</td>
<td>----------------------------------------</td>
<td>--------------------------</td>
<td>-------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>11/16/15</td>
<td>Doug Gilpin</td>
<td>Bike &amp; Walk</td>
<td>1 with dog</td>
<td>0</td>
<td>Recreation/ Exercise</td>
<td>Memphis and Nassau Drive</td>
<td>Yes, at the Sofia Men parking lot</td>
<td>Very uncomfortable</td>
<td>Too many lanes — cars move too fast and don’t look for you. With a dog and a bike or with kids it’s taking your life in your hands.</td>
</tr>
<tr>
<td>11/17/15</td>
<td>Dave Giss</td>
<td>Bike</td>
<td>2</td>
<td>0</td>
<td>Recreation/ Exercise</td>
<td>Mission Viejo near MV Elementary</td>
<td>No</td>
<td>Uncomfortable</td>
<td>Crossing at Quincy &amp; 7-11 then along south side narrow sidewalks to Parker is challenging. Car going into gas station is not always aware of bikes. Crossing 6 lanes at Parker when coming out of Cherry Creek Park is difficult with westbound turning traffic at Quincy &amp; Parker.</td>
</tr>
<tr>
<td>11/17/15</td>
<td>Dave Weber</td>
<td>Bike</td>
<td>1</td>
<td>0</td>
<td>Commute/ Transportation</td>
<td>Quincy &amp; Chambers</td>
<td>No</td>
<td>Uncomfortable</td>
<td>When crossing westbound, the left turn area for cars turning from Quincy to Parker changes very quickly. This can result in cars turning into bikes or pedestrians crossing.</td>
</tr>
<tr>
<td>11/18/15</td>
<td>Elaine Turnbow</td>
<td>Walk</td>
<td>1-4</td>
<td>0</td>
<td>Recreation/ Exercise</td>
<td>Mission Viejo Park Ave &amp; Loyola Rd.</td>
<td>Yes, at end of parking lot on NE corner of Quincy &amp; Parker</td>
<td>Uncomfortable</td>
<td>Crosswalk is only on one side of intersection</td>
</tr>
<tr>
<td>11/18/15</td>
<td>Chris Lightner</td>
<td>Bike</td>
<td>Up to 4</td>
<td>2</td>
<td>Recreation/ Commute</td>
<td>Mission Viejo, Quincy &amp; Chambers</td>
<td>No</td>
<td>Feel very uncomfortable when have kids with. OK by myself.</td>
<td>Too many crosswalks and too much traffic to deal with. Worry that someone will run a light and hit my child. Pain to cross the 7-11 as well.</td>
</tr>
<tr>
<td>11/18/15</td>
<td>Lalith Griffin</td>
<td>Bike</td>
<td>1-20</td>
<td>Rare/ Any</td>
<td>Recreation</td>
<td>Mission Viejo neighborhood of Chambers and Milan. Take a longer route and cross Hampden at Dawson in order to cross Parker Rd safely at Hampden.</td>
<td>No</td>
<td>Lets call it suicidal. Would do only if facing end of life issues (But its not fair to motorists. I know Quincy is designated a bicycle route, Hampden is not. Crossed at Quincy with bicycle once only when a winter storm approached more quickly from my back than I had anticipated. It was extremely hazardous with sleet and darkening skies and splash up from motorists. It was the most route home so I attempted it — and lived — and learned.</td>
<td>I go to Hampden</td>
</tr>
<tr>
<td>11/18/15</td>
<td>Kathy Sikes</td>
<td>Bike</td>
<td>1-2</td>
<td>0</td>
<td>Recreation/ Exercise</td>
<td>Quincy and Chambers. Begin on E Princeton Ave, onto S Chamber Way, cross S Chamber Rd, go through the townhome complex and come out onto Quincy at S Fraser St, then west on Quincy. Use the stoplight at S Wisham Way to cross to the south side of Quincy, continue west on Quincy to the stoplight at Parker and Quincy. Use the stoplight to cross Parker Rd, then cross over Quincy and into the park.</td>
<td>No</td>
<td>Crossing the pedestrian buttons at Parker and Quincy in order to cross Parker Rd allows about 3 seconds before beginning the countdown of about 20 seconds. There are three lanes of traffic stopped at the light, and the potential of traffic coming off of Quincy. A driver in the far lane may not see a bicyclist as they begin crossing Parker. As you reach the far side, the light changes to allow traffic coming from Quincy to turn southbound onto Parker, and one must also watch for cars coming onto the Quincy dead end as we cross into the park, as well as cars turning from southbound Parker onto the Quincy dead end. I cannot imagine a family attempting this crossing, and have never seen families or kids in this area.</td>
<td>Good luck!</td>
</tr>
<tr>
<td>11/18/15</td>
<td>Mary McMillen</td>
<td>Bike</td>
<td>2</td>
<td>0</td>
<td>Recreation/ Exercise</td>
<td>Quincy &amp; Mandalay. Ride down Quincy and cross to Cherry Creek State Park at Quincy/Parker intersection. Sometimes, Sofia Mart parking lot</td>
<td>Sometimes, Sofia Mart parking lot</td>
<td>Very uncomfortable</td>
<td>The light at Parker &amp; Quincy isn’t long enough to cross safely. The amount of traffic on Parker is very intimidating too.</td>
</tr>
<tr>
<td>11/18/15</td>
<td>Ritting</td>
<td>Bike &amp; Walk</td>
<td>1</td>
<td>0</td>
<td>Recreation/ Exercise</td>
<td>Parker and Quincy</td>
<td>No, Parker and Quincy</td>
<td>Very uncomfortable</td>
<td>The traffic on Parker and Quincy roads is very heavy and not safe for bicyclists or walking into the park.</td>
</tr>
<tr>
<td>11/18/15</td>
<td>Dan Dunlap</td>
<td>Bike</td>
<td>2</td>
<td>0</td>
<td>Exercise</td>
<td>Mission Viejo at Hampden/Chambers</td>
<td>No</td>
<td>Very Uncomfortable</td>
<td>The traffic on Parker and Quincy roads is very heavy and not safe for bicyclists or walking into the park.</td>
</tr>
</tbody>
</table>
# PEDESTRIAN AND BICYCLIST SURVEY RESULTS

Survey distributed to Bicycle Aurora members and Adventure Cycling customers in November 2015

<table>
<thead>
<tr>
<th>Date Completed</th>
<th>Name</th>
<th>Walk/Bike</th>
<th>Total Number in Group</th>
<th>Number Under 14 y.o.</th>
<th>Purpose</th>
<th>Origin of Trip</th>
<th>Park Vehicle Before Trip</th>
<th>Comfort at Intersection</th>
<th>Issues with Walking and Biking at Parker/Quincy</th>
<th>How Far Out of Your Way</th>
<th>Other Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/19/2015</td>
<td>Bob Niedringhaus</td>
<td>Bike</td>
<td>1</td>
<td>0</td>
<td>Recreation/Exercise</td>
<td>Generally, east and south of the vicinity of Quincy and Chambers intersection. Smoky Hill Road is more direct for my route, but it is very bike-unfriendly along most of its length, and especially at the Quincy / Smoky Hill intersection (a no-man’s land for bikes)</td>
<td>No</td>
<td>Very uncomfortable, it feels like you are taking your life and placing it in the hands of distracted drivers in a &quot;rush&quot;.</td>
<td>The wide sidewalk along the north side of Quincy encourages bike usage, but there is no crossing at the Quincy / Parker intersection at the NE corner; necessitates crossing at SE corner across seven lanes. Off-shouldering across the signaled intersection is block to east of Parker on Quincy. Cars are frequently backed-up through this intersection and also cross setting through the shopping center parking lots to avoid delays, which have no bike accommodation making it dangerous. Would be nice to go through the neighborhoods north of Quincy at the Quincy / Smoky Hill / Carson intersection to the east and avoid the Quincy / Parker intersection entirely, but there is no through connection to the Arapahoe / Parker intersection to cross over to the Cherry Creek N.P. If this short cut is developed, it should be done in a manner (sidewalk or bike / ped path only) to prohibit cars and trucks from using it during rush hour peak traffic.</td>
<td>See answer in previous column. Also, since I am biking 20+ miles, a safer route, with connections to points east and south, within a ride would be welcome.</td>
<td>Kudos!!! to the City of Aurora for looking at, and considering bikes and ped's as part of this redesign. If only Arapahoe County (to the south along Parker) and the State (to the east on Parker) would be as thoughtful, bike commuting would be much more practical and safer.</td>
</tr>
</tbody>
</table>

| 11/20/2015     | Pat Kraft          | Bike      | 1                     | 0                   | Recreation/Exercise | Parker and Quincy | Yes, Emerald Isle in the morning before they open | Very uncomfortable | The northeast corner parking requires going over 3 intersections (across Quincy and then over Parker and then over Quincy again) |                                                             |                                                                 |
Pedestrian Bicyclist Survey #2 Summary
May 24, 2016

The second pedestrian bicyclist survey was distributed to Bicycle Aurora members and Adventure Cycling for feedback regarding treatments for bicyclists and pedestrians for incorporation into the final study recommendations. The survey was distributed during the month of May. Following is a summary of the responses, collected through written submission and phone conversation. This summary includes comments received through May 24, 2016.

What type of sidewalk improvements would you like to see at the Parker Road/Quincy Avenue and Smoky Hill Road/Quincy Avenue intersections or along Quincy Avenue?

- Below grade crossings (2)
- Wide and clear of obstacles
- Signage
- Signal buttons need to be readily accessible
- Raised or better marked crosswalks
- More signals
- Address right turn on red since it causes conflicts with people who are crossing
- ADA compliance
- Make decision as to access, either northside of Quincy or improve southside significantly

What crosswalk applications would make you feel more comfortable crossing Parker Road, Quincy Avenue, or Smoky Hill Road at the study intersections?

- Clear delineation of the crosswalk (2)
- Signage (2)
- Surface treatment at Chambers and Yale, although not sure about text on road
- Add signal for right turn from northbound Quincy to eastbound Smoky Hill before the crosswalk to align with the stop bar on Quincy
- Advance stop bars before crosswalks
- Signal buttons need to be readily accessible
- Wayfinding signage
- Raised crosswalks
- Brighter paint
- Flashing light when signal is red to indicate to drivers that they must stop before turning right
- ADA compliance
- Improvements to accessing bus stops
What do you think about having signalized control for the right turn lanes at the Parker Road/Quincy Avenue and Quincy Avenue/Smoky Hill Road intersections?

- Avoid the use of pork chops (2)
- Lighted sign with sensor for flashing lights (2)
- Anything to make the crossings more obvious to drivers
- Signage
- Good lighting
- Curb alignment
- Greater size of island to allow comfortable waiting

Other Comments?

- A great example of multimodal transportation is from the Netherlands!
- Location directly across from Cherry Creek State Park make this an attractive site for future development. Above and below grade intersection flow would be necessary.
- Can we do tunnel? No crossing of Parker/Quincy intersection?
- Both of these intersections are heavily utilized by commuters, families, students, cyclists, etc. I've had entirely too many close calls simply trying to get from the RTD stop to my place, can't even imagine what it's like for families with children. Many of us chose this neighborhood for its proximity to the state park and multiple RTD options, at the very least we should feel safe while taking advantage of these opportunities. Thank you.
Public Meeting #1 Summary
October 20, 2015

Public Meeting #1 was held on October 20, 2015 at the Shalom Park Meeting Room (14800 E. Belleview Drive, Aurora 80012). The meeting was held from 4:30 – 6:30 PM in an open house format. Approximately 90 people attended the meeting. Following is a summary of comments submitted by meeting attendees on comment sheets, recorded by open house staff during one-on-one conversations with attendees during the public meeting, and submitted via email and on the project web page. This summary includes comments received through October 27, 2015.

How do you use the transportation system in the study area?
I live here (30)
I patronize adjacent businesses (12)
I work here (3)
I commute through (3)

What are your highest priorities for this corridor?
Vehicular mobility (21)
Direct access to properties along the roadways (10)
Safety (23)
Other (3)
• Speed needs to be 45 MPH!
• Danger across from S. Atchison Way and Parker
• How to get safely across intersections on Quincy Ave.

Connections to State Park trails (4)
Pedestrian accessibility and facilities (2)
Bicycle accommodations (4)
Transit connections (6)

Please share your thoughts regarding existing conditions and/or issues within the study area. What needs improved? (Consider traffic conditions, roadway and drainage, environmental and community resources, pedestrian/bicyclist facilities and transit)
Speed

- Drag racers on Parker, speeding & screeching late at night.
- The Parker Road raceway needs to slowdown. Make it safer to walk.
- Need a number to call on phone when racing on Parker Road occurs in the middle of the night (11pm – 4am).
- Quincy Avenue between Chambers & Smoky Hill it is used as a drag strip between 7 – 10 AM and 3 – 6 PM. Would be helpful to put a “your speed” sign that lets them know how fast or radar enforcement. Traffic speeding on Smoky Hill from Quincy to at least Buckley, and running traffic lights. Please consider.
- People getting thru light at Parker/Quincy going north do not slow down at all. Plus they get in the right lane and we can’t get out.
- Speed limits 55 mph southbound on Parker Road south of Quincy too high – the rest is 45 mph.

Traffic Signals

- I do like traffic lights on Smoky Hill and Quincy when police are on Smoky, Quincy, Chambers. They pull over 3 – 10 vehicles every two hours, but they can’t be there all the time.
- Right now the volume is obviously too great for Quincy Avenue. Perhaps for starters a traffic light at Quincy and Dillon would be good as well as better timing on the traffic light at Quincy and Carson Street. We definitely need those intersections better patrolled as many people are not obeying the traffic signals we now have.
- Quincy Avenue west needs left turn signal at Smoky Hill Road.
- Traffic light timing regulates to rush hour volume as well as access to businesses in the area.
- Traffic light timing issues on Parker/Quincy.
- The lights at Parker and along Quincy seem to be out of sync a lot. Three lanes turn left from southbound Parker but the light at the shopping center entrance is red. Traffic can’t get through and backs up into Parker Road. Also, eastbound Quincy traffic at Smoky Hill doesn’t know they have a double right turn so they try to move into right lane.
- Thank you for whoever is controlling traffic lights at Quincy and Parker. There seems to be a bigger delay northbound so I can make a right hand turn onto Parker Road going north and to make a left turn into S. Atchison Way!! Thanks again!
• In evening traffic turning left off of southbound Parker Road will frequently get trapped in the intersection because the light at Harbor Plaza is poorly timed.

• The traffic light at S. Abilene Circle and Parker Road needs left and right arrows so it is safe to get onto northbound Parker Road from S. Abilene Circle. Also need left arrow to make turn left from southbound Parker Road into Park Place Villas.

• The traffic light at Temple Drive needs an arrow for left hand turns.

• The intersection of Smoky Hill Road and Evanston needs a traffic light ASAP. This intersection/Evanston is the main route to service Sagebrush Elementary School. Very heavy traffic in the morning between 7:30 – 8:30 am turning off of Smoky Hill road from the west and east to go south on Evanston to the school. Then in the afternoon between 3:00 – 4:30 pm traffic is very heavy on northbound Evanston trying to get onto Smoky Hill Road. This intersection is extremely dangerous and needs to be addressed and changes ASAP! If it is not changed there will be a very bad accident and someone will likely be killed! The existing traffic light at Smoky Hill Road and Tufts Place is not accessible to Sagebrush Elementary School traffic because there is no connecting street from that development to the school!

• Traffic is backed up in the middle of the day at the signal at Smoky Hill/Quincy to turn right onto Parker Road.

• The current conditions during AM rush hour turning from Carson Street right to Quincy do cause backups from trying to make the turn. Traffic from Smoky Hill and Quincy block the intersection.

• Why two signals northbound on Smoky Hill at Quincy?

• Parker southbound left will back up into intersection (due to signal at shop center) and block the northbound through lane. Need better signal coordination.

• The traffic light at the shopping center entrance on Quincy does not coordinate with the Parker/Quincy light well. The southbound to eastbound left turn traffic is often stopped by the shopping center light after making the left turn.

• A senior citizen from Park Place Villas said that she would like to have a left turn only signal phase for the northbound Parker Road to her neighborhood movement as Park Place Villas is a retirement community and it is unsafe to make an unprotected left turn for the seniors.
Pedestrian/Bicyclist/Transit Considerations

- Parker Road at Quincy Avenue needs more secure crossing for pedestrians going to Cherry Creek State Park.
- As a bicyclist I avoid Quincy and opt for a longer route between my home and Cherry Creek State Park. The Hampden exchange works well for bicyclists. Quincy is too congested at Parker, Smoky Hill, and Chambers to feel safe even though it is designated a bicycle route and Hampden is not. Right hand turns on red are highly dangerous to peds/bicycles as people are accustomed to ripping through in their cars and trucks.
- Too dangerous to cross Parker Road to get to reservoir.
- I am concerned about the safety of pedestrians crossing the intersection of Parker and Quincy. On several occasions I have witnessed vehicles not obeying traffic rules and either running the red light at a high rate of speed or not yielding to the pedestrians already in the crossing area disregarding their safety. I live on the east side of Parker and very often I have to cross Parker to get to the Cherry Creek Park. I am always very concerned for mine and my family’s safety.
- Also, people in our neighborhood who bike or walk to Cherry Creek State Park from our neighborhood have mentioned to me they feel it is extremely dangerous to cross Parker Road to get to the State Park.
- Need a walkway to cross Parker Road at Quincy that is underground.
- Several attendees said that the permissive left turns across Parker detract from feelings of comfort.
- There is a lack of yielding to pedestrians on Parker Road.
- People report that they feel hurried in crossing Parker Road at Quincy, especially because of the left-turning vehicles that are turning during the same signal phase.
- Walker/bicyclists are in danger when crossing Parker Road at Quincy and Temple Drive. Lights do not give them enough time.
- Intersection of Quincy & Cherry Creek Racquet Club – since the building of the wall you can’t see to pull out unless you get into walkway area. Bicyclists come flying through and almost hit your car.
- It’s hard to see past the sound wall on Quincy Avenue at the Cherry Creek Racquet Club without blocking the intersection. It’s hard for drivers to see if there are people walking or biking into the intersection because of the sound wall. Poor visibility and high potential for conflict.
- Eastbound right turn at Smoky Hill is dangerous for pedestrians.
• Bus stop needs removed on Parker Road across from S. Atchison Way because people get off bus & try to walk across six lanes of traffic.
• The southbound bus stop at Atchison on Parker is dangerous for crossing pedestrians.
• RTD stop at Atchison Way southbound (between Lehigh & Parker) is dangerous due to mid-block crossings.
• Pedestrians report feeling unsafe crossing Smoky Hill Road at Quincy Avenue – there’s a lack of yielding.
• Jay walking across Quincy is stressful for drivers.
• South of Parker Road pedestrians walk on the outside of the guard rail and walk in the dirt.
• Lack of sidewalks south of Temple Drive an issue.
• The lack of sidewalks on Parker Road around Temple Drive mean that people walk in the road during the winter. Extra dangerous.
• Add a sidewalk from Quincy to Temple on west side of Parker Road – mostly dirt.
• Temple Drive to Saratoga on the east side of Parker Road lacks sidewalks.
• Lack of sidewalks on Parker Road cited numerous times as an issue.
• Lots of people are going through the yellow light (not sure where).
• Lack of pedestrian crosswalk on Parker Road (north side of Quincy Avenue intersection) makes it more difficult to walk.
• Right turn on red means that drivers aren’t yielding to pedestrians.

Neighborhood Access
• I live in Pier Point. A road through to Carson Street from S. Atchison Way would be nice but not sure it is possible. When traffic is bad on S. Atchison Way south to Quincy I cut through the shopping center to the traffic light or for northbound Parker Road access I go through the shopping center and come out near gas station or McDonalds as traffic has not built up speed as much there from the traffic light at Quincy, and seems safer access than S. Atchison Way.
• We live in Pier Point and it is impossible to get out onto Quincy and Parker Road. Install a light from Pier Point onto Parker Road. It’s awful.
• Access to Pier Pointe is difficult and needs improvement. No signal at Atchison? Only way to turn left is to cut through shopping center.
• It is very difficult to turn right or left onto Quincy from Atchison Way (Pier Point) or Atchison Circle (Cherry Creek Racquet Club) due to heavy congestion on Quincy.

• It’s difficult to exit onto Quincy Avenue (northbound) from Atchison Way. The current signal timing and traffic volumes make these turns (right and left) challenging.

• It’s difficult to exit onto Parker Avenue from Atchison Way. The current signal timing and traffic volumes make these turns (right and left) challenging.

• One participant is worried about potential broadside crashes as Atchison Way and Quincy Avenue, especially with queuing and the poor visibility when making a northbound left turn onto Quincy Avenue.

• Southbound Carson Street right turn can’t get out in morning.

• In the morning when I drive down South Carson Street to Quincy Road to go to work during rush hour I turn west from South Carson Street onto Quincy Ave. to get to Parker Road. It’s always very congested and especially if I need to get to the far left lane to go southbound on Parker Road it can be almost impossible to get over far enough to get onto Parker Road.

• Southbound Atchison onto Quincy – difficult in am turning east or west.

• Safe ingress/egress for S. Atchison. We need traffic lights or streets through to other streets with lights. We must have a light at Quincy & Atchison and Parker & Atchison.

• Lots of broadside crashes at Atchison/Quincy.

• Many Pier Point neighborhood residents use shopping center light to access Quincy rather than use Atchison Way (access is from north side of shopping center).

• Widen Quincy between Smoky Hill and Parker Road adding an additional right turn lane to get on Parker Road. The left turn is currently more than adequately served. Improve access to Parker Road for residents living behind the shopping center (Atchison, etc.).

• Our only way in-out is Parker Road (right turn) on Quincy. Very dangerous conditions. No one pays attention to “Do Not Block Intersection”.

• Intersection of Quincy and the Cherry Creek Racquet Club – you can’t go east in the AM out of the subdivision. Cars block intersection and fly through in the 3rd lane.

• Northbound left at Parker has low volume because people turn in at access points out of Quincy.
• People often bust through the northbound Parker Road right-turn only lane at Andover Glen entrance, and therefore, makes it harder and unsafe for the Andover Glen residents to make a right to northbound Parker Road.

Other
• The lighting on Parker is bad. Light poles exist but many are not lit from Quincy to I-225.
• Now it is extremely difficult to drive south on Parker Road. Now I have to drive through the shopping center to use the light to enter onto Quincy. It doesn’t matter what time of day it is!! Lots of times people block the intersection and you can’t enter on the green light.
• Big “XXX Do Not Block” at S. Atchison exit onto Quincy and same on Quincy at shopping center exit so cars exiting shopping center can get into turn lanes to go south on Parker Road.
• Southbound Parker traffic sometimes has to stop at shopping center signal and some in opposite direction.
• There is already so much traffic on Parker Road & Quincy – then the city approved Starbucks & McDonalds. What do you expect?
• Has there been an increase in crashes at driveway in/out Starbucks?
• This area is overgrowing its roads.
• Very heavy traffic, etc. at rush hour.
• It appears to have too many cars to lanes of traffic. The Quincy corridor remains very congested in AM/PM rush hours. Limited visibility when crossing lanes from Atchison to Quincy.
• Any solution for heading south on Parker turning onto Quincy must take into consideration that the majority of traffic is actually turning onto Smoky Hill. Heading north on Parker needs dedicated turn lane into businesses adjacent to Parker & Quincy.
• Clearly, the confluence of traffic on Smoky Hill and Quincy is a huge issue. If there were a way to separate those flows, it would help everything.
• About Parker/Quincy: “It sucks”.
• People are driving in the right turn lane on Parker Road, even if they are traveling through the intersection.
• Northbound right-turn vehicles into the shopping areas at both the south and north sides of Quincy are impeding through movement significantly especially after the opening of McDonald’s and Starbucks.
• The left-out movement to Parker Road is now allowed at the McDonald entrance at Parker Road. It is a very dangerous movement.

• People don’t understand that the eastbound center lane on Quincy can also turn right to Smoky Hill Road. Many drivers are trying to force into the right-turn only lane to turn right to Smoky Hill Road.

What ideas do you have to reduce congestion and improve operational performance and safety at the Parker Road and Smoky Hill intersections along Quincy Avenue?

**Speed**

• Quincy Avenue between Chambers and Smoky Hill can be a race track during rush hours. Install one of those “your speed is” devices for a while and increase traffic police for a while.

• Speed enforcement.

• Speed cameras!!

• Speed on Parker needs to be reduced to 35. The existing 45 – 55 mph on Parker needs to be enforced. Parker Road was never meant to be a north/south interstate!

• The speed limit on Parker Road should be reduced to 45 related to massive amount of traffic and unsafe drivers.

• From Emerald Isle southbound, Parker Road is 55 mph and needs to go to 45 mph south to Arapahoe Road. Speed is out of control.

• Right turn lane southbound needed at Emerald Isle. Many cars still go thru next intersection illegally because they are going too fast. Speed limit needs to be lowered back to 45 mph because too much pedestrian traffic accessing Cherry Creek State Park is at risk.

**Traffic Signals**

• Move the signal from shopping center to Atchison.

• Time the traffic light so there is a gap that allows cars turning right from Atchison Way onto Parker to get out.

• No right turn on red requested for Parker Road and Quincy Avenue.

• Stop light requested at Atchison Way and Parker Road so people can access Parker Road safely.

• Consider putting a traffic signal at Dillon Way and Quincy.

• Better timed traffic signals.
• Traffic projections for the Carson Street/Dillon way loop show increases in traffic for 20 years and 40 years out. This area is fully constructed and has been for many years, so anticipating increased growth in the area may be unrealistic. Putting a traffic signal at Dillon Way and Quincy could substantially drain off that concentration of traffic by providing a useful egress for that loop area.

• Permission to make a U- turn on Quincy/Shopping Center light to go east on Quincy.

• Improve the timing of the Harbor Plaza light.

• Heading south on Parker, turning left at Quincy: Time lights at Harbor Plaza & Smoky Hill to allow the turning traffic to flow, at least in the afternoon.

• Traffic eastbound from west side of Quincy/Parker intersection need sensor activated left turn arrow to go north on Parker Road. Westbound Quincy traffic presently does not usually yield. Quincy westbound have two lanes dedicated for right (north) turn leaving center (3rd lane for Quincy eastbound to make left (north) turn but westbound do not stay in dedicated lanes causing sideswipe accidents and/or congestion because east bounders not familiar with intersection don’t clear intersection thinking all northbound lanes are taken.

• Possible longer hold times – better timing of lights from Chambers, Smoky Hill to Parker Road.

• Look closely at the number of accidents at the intersection of Quincy & the Cherry Creek Racquet Club entrance. Your study expands it to the stoplight that goes into the shopping centers – pull it out of there – the preponderance of accidents (broadside) happen at Quincy/Cherry Creek Racquet (Atchison).

• Stoplight at intersection and pavement painted so people don’t block the intersection – too many accidents at this intersection.

• Added traffic signals at Dillon.

• Because of the inordinate amount of traffic feeding into Quincy Avenue from Smoky Hill Road and Chambers Road I think that during peak hours traffic needs to be metered and the flow control to be accomplished by metering the control of traffic further east of these high volume intersections.

• We know this won’t happen but we can ask! Light at corner of Atchison Way and Parker.

• Improve the access from Pier Point onto Parker by installing a traffic light.

• The shopping center light should not be red for east/west drivers when left turn signal is green for three lanes of Parker turning left on Quincy.
• Would like a do not block intersection sign in front of Emerald Isle, across to Rice Place or a crosswalk.
• At some of these signals there could be don’t block intersection signs!
• Add a “Do not block intersection” sign to be posted at Quincy Avenue and Atchison Way.
• Need a “Do not block intersection” sign at Parker Road and Rice Place.
• Large “X” boxes at intersections at shopping center and S. Atchison Way on Quincy and other intersections that get blocked and cause resulting domino effect on side streets.
• Add do not block sign on road both ways near shopping center.
• My suggestion would be to add DO NOT BLOCK for the intersection of Atchison & Quincy on road. Presently there is one small sign near/between church and assisted living facility that can’t be seen by all lanes of traffic on Quincy.
• Need a northbound left turn phase at Chambers/Quincy.
• Need a left turn signal on northbound Chambers to westbound Quincy.
• Need the west leg at Parker/Quincy to be signalized.
• Need sensor activated green for eastbound Quincy at Parker for left turns.
• Ask Aurora Police about red light running and accident data they use to justify locations.
• Eastbound from storage facility at Parker/Quincy needs a left turn arrow!
• There should be a physical barrier to prevent drivers in the southbound through lane on Parker from forcing into the southbound left turn lanes at the Parker/Quincy Intersection.
• Traffic light needed at Evanston Street going to Sagebrush Elementary.

Pedestrian/Bicyclist/Transit Considerations
• Consider pedestrian/bicycle bridge over Parker to Park.
• Pedestrian and bicycle bridge over Parker Road somewhere along Parker so that the Quincy/Parker intersection is safer.
• Perhaps add a pedestrian overpass on Quincy to get to the south side which makes it easier to get to the small shopping center.
• I'd like to see the study include the feasibility of a pedestrian bridge that would cross Parker Rd at the Quincy Ave/Parker Rd intersection. This would improve safety of pedestrians and bicycle riders entering Cherry Creek State Park. Thanks for the ability to provide input.
• Put bicycle path on north side of Quincy Avenue.
• Underground walkway near Emerald Isle.
• Sidewalk along Parker from Quincy north needs to be wider or maybe a cement barricade between traffic & people walking. It is so dangerous, especially along retaining wall for Pier Point (Casa Vallarta & S. Atchison Way).
• Maybe pump up the Temple/Tufts path from Parker to Smoky Hill so that it becomes preferable to Quincy/Smoky Hill.

Neighborhood Access
• If Lehigh went through to Carson and straight over Quincy onto Smoky Hill without much stopping, so that Smoky Hill traffic exited Parker at a different spot than Quincy traffic, that might help flow.
• Put Lehigh and Oxford through to Carson.
• Carson should go over/under Quincy straight to Smoky Hill. Carson extends all the way to Lehigh. So, southbound Parker drivers take Lehigh to get to Smoky, not Quincy.
• Make a through street north of Quincy east of Parker Road to lessen congestion on Parker Road. I do believe the City has money to do this. This is one of the most dangerous traffic areas and it just gets worse. Helicopters anyone?
• Any access options for Atchison Way to east or north? Through Park to Carson Street?
• Need light at entrance to Cherry Creek Racquet because there are too many accidents. You can’t pull out of Cherry Creek Racquet Club in AM.
• Atchison Way onto Parker Road needs a gap to turn northbound (two people mentioned this).

Turn Lanes/Additional Lanes
• Add additional lane on the east side of Parker at Quincy. This should be dedicated turn lane into for businesses & merge lane without light for cars needing north on Parker from Quincy.
• Add an additional turn lane Quincy to Parker turning from Quincy westbound to Parker northbound (take shopping center unused parking lot space).
• Make two right turns from Quincy to Parker Road by widening Parker to the west.
• Consider a new westbound lane from Smoky Hill to Parker along Quincy.
• Make an overpass from Parker to Quincy as a left turn, no stop at least get
  the ground secured now for a later date. Set a start date now.
• Flyovers from Parker Road to Quincy.
• Need a flyover for Parker to Quincy/Smoky Hill.
• Can there be a HOV/Carpool lane/bus lane along Parker? This could also be
  an emergency lane if needed.
• Merge lane from Atchison Way all the way to Lehigh & Quincy.
• Change the lanes in the shopping center so that right turn and straight turn
  are in the right hand lane and make the left lane strictly a left hand turn. Put
  a left hand turn at the traffic signal.
• Widen the road.
• Extend Carson to Lehigh allowing Smoky Hill direct access to Parker. Use
  overpass at Quincy & Smoky so that traffic doesn’t stop. Yes, that means
  removing homes & golf course.
• Please add a left turn lane at cherry creek pointe. Currently we have to pull a
  U-turn on Parker Road and head north. It can be dangerous at times. The
  vehicles going south are speeding on by. It causes my truck to shake. Some
  drivers treat Parker Road like it is I-25. There will be a death from being rear
  ended. It would not surprise me if it has happened already.

Other
• Thanks for informational meetings.
• Thank you for this meeting.
• Find an alternative to existing Parker Road. Need a secondary road. Maybe
  Buckley, Chambers or other.
• Can roundabouts be used for any part of improved traffic flow? Need a
  flyover for Parker to Quincy/Smoky Hill.
• Can roundabouts be used for any part of improved traffic flow?
• Turn Quincy & Harbor Plaza into a roundabout.
• We need a large sound barrier for the neighborhood south of Temple Drive.
• Andover Glen needs a large wall next to Parker Road to help block the noise.
• Safety – review all lighting along Parker at night.
• Better lighting along Parker. Existing lights aren’t working.
• Try to have Belleview go through Cherry Creek reservoir land as another access. Greenwood Village has fought this for many years. I know they will not want it but it would take a lot of southbound traffic from Quincy and Parker.

• Exits.

• Close off Parker Road!!! HA!

• Costly, but give Hampden/Parker a good long look and see if you can design something similar for Parker/Quincy or similarly effective. When motoring I prefer turning at Hampden and not at Quincy.

Please provide general suggestions and comments regarding this study.

• Hopefully some small improvements can be made in the near future so that we don’t have to wait till 2020 or 2040 to get some help!

• Thank you for inviting residents to this meeting. I’d like to know why state and federal funds aren’t available.

• Please provide a general timeline.

• Park Place Villas consists of 71 units. Builder made agreement with Aurora to let people park in our south parking lot. Therefore the number of cars in/out of S. Abilene Circle greatly exceeds the number of residents.

• I have concerns about our south parking lot. Park Place Villas owns this lot and has to keep it up but the public gets to use this for free. Found needles, condoms, trash, and liquor bottles. Have left their cars for the day and is used as a park and ride. Drug deals are going on at night. Many cars don’t turn on the turning lane at Temple Drive, but continue down Parker Road. Light is too short to get onto Parker Road.

• Since we live in Park Place Villas, I would like parking lot at the Villas to become the private property of our homeowners’ association so we could put in more nighttime lights and possibly a safety can be placed at parking lot.

• The study area is a start. But, Quincy & Parker & Parker and Hampden should have priority. Someone is going to get killed at either site. Look what happens when it’s icy. The speed is too excessive. I realize that these are major roads to move traffic to/from I-225.

• I’m looking forward to seeing/hearing all possibilities for a better commute along this corridor.

• Chambers Road through to Parker alleviates my need to use Quincy as a motorist.

• Growth to east is a fact. We’ve lived 27 years in our home 3 houses up from Smoky Hill off Evanston (we hear the traffic). Smoky Hill in 1988 when we
moved in was three lanes each way -- remarkably long sighted. Quincy/Parker is a nightmare exacerbated by increased growth to the east that feeds on Quincy and Smoky Hill, by that stupid light (but necessary) for 7-11 and Furniture Row shopping malls, and the recent addition of McDonalds there where more people from southbound Parker turn left. This notice I'm responding to seems indicative that we aren't getting the solution used at Hamden/Parker -- and talking about 2020 and 2040! Seriously? We need that same solution (graded exit) with lanes dedicated to safely move traffic into these commercial ventures and remove that stupid light! Additionally would like to see a graded exit for Lehigh to eliminate that light... and less expensively, short term, immediately! block/cease access to both Atchison and McDonalds (no left turns!) from southbound Parker Road. The only left turns from southbound Parker south of the spillway should be Hampden, Lehigh (fixed/removed), Quincy, Temple, Belleview, Chambers, Orchard, ?? into Arapahoe Crossing and Arapahoe Road. As a homeowner in this area I am open to and supportive of mil levies which can finance the needed improvements in the shorter term. And feel it reasonable as well to get funds from developers well to the east whose projects impact 85/Parker miles away.

- Andover Glen residents are very concerned about the cut-through traffic if one of their entrances are closed. They are experiencing cut through traffic from Woodgate currently.
Public Meeting #2 Summary
March 4, 2016

Public Meeting #2 was held on March 3, 2015 at the Shalom Park Meeting Room (14800 E. Belleview Drive, Aurora 80012). The meeting was held from 4:30 – 6:30 PM in an open house format. Approximately 55 people attended the meeting. Following is a summary of comments submitted by meeting attendees on comment sheets, recorded by open house staff during one-on-one conversations with attendees during the public meeting, and submitted via email and on the project web page. This summary includes comments received through March 17, 2016.

How do you use the transportation system in the study area?

I live here (23)
I patronize adjacent businesses (12)
I work here (3)
I commute through (10)
Other (5)
  • Access Cherry Creek State Park on bike
  • Use Cherry Creek
  • Own a rental property in area
  • Cycle
  • Working on developments at the intersection

Please provide feedback regarding the initial (Level 1) and comparative (Level 2) alternatives screening. Do you agree with the screening results?

• No
• Yes (3)
• You gotta do what you can with the money you got. I think appropriate selection criteria and creativity were both employed.
• Yes, it seems like more traffic!
• All good – understand process.
• I do agree with screening results; I am definitely in favor of making changes to this area.
• I have not seen screening results.
• The more comprehensive solutions are far more likely to have significant impact.
• Prefer Alternative 1 over Alternative 2. Removing crosswalks across S. Parker Road may be necessary to save pedestrians.
• Unfortunate that Alternative 7 (or similar) is not being considered. Alternative 7 from screening Level 2 looks best, but can it be raised to allow businesses to remain? Or a fly-over?
What are your suggestions to optimize benefits and minimize impacts of the action alternatives being carried forward (Alternative 3 and Alternative 5)? Which design elements should be included in the study recommendations?

**Parker Road/Quincy Avenue Intersection**

- Prefer alternative #5. (3)
- Alternative 3 looks ok for short term – all elements included Alternative 5?
- Parker Road already needs more lanes. Take part of the parking lot from shopping center (almost dead) and part of park and make it work for next 10 years. Parker Road has construction every two years!
- Help with pedestrians.
- Stop lights at the business entrance slow traffic.
- More lanes.
- Install protected left turn lights at the 7-11 intersection. Currently, there are no protected turn lights which makes turning onto Quincy highly unsafe on the road that is already congested by locals.

**Overhead Lane Controls/Signage/Signal Timing**

- I think switching the direction of one turn lane for AM/PM use is clever, but I worry about communicating that effectively.
- It would also seem helpful to have some big signs above eastbound Quincy, right after the Furniture Row traffic signal, pointing out that the right turn onto Parker Road is double-laned--that everyone turning right doesn't need to merge into one right lane.
- The biggest problem seems to be traffic buildup between the Parker Road/Quincy intersection and the Smoky Hill/Quincy intersection. Most of the traffic seems to come from Smoky Hill in the mornings and southbound Parker Road in the evenings. To prevent the buildup from happening, implement green waves from east to west in the mornings and west to east in the afternoon and evenings in the three traffic signals involved (Parker Road and Quincy, Furniture Row and Quincy, and Quincy and Smoky Hill).
- Time the lights at both Parker and Quincy with the lights at Smoky Hill and Quincy so that there is not a jam up.
- For the southbound Parker Road to eastbound Quincy Avenue traffic, the lights at Harbor Plaza need to be timed better. Many times I have observed the traffic at Harbor Plaza getting a green light at the same time as the left turn lanes from Parker Road get a green light so the Parker Road traffic cannot properly clear the intersection. A minor, probably close to free change, could improve traffic flow quite a bit.
- Many of the problems associated with these intersections would be alleviated if the signal at the 7-11 was removed or if the signal was retimed to better match surrounding signals. It is too close to the Parker and Quincy intersections.
- Request that the red lights during peak hours (6 a.m.-9 a.m. and 3 p.m. to 6 p.m.) stay on slightly longer at Parker and Quincy; at Smoky Hill and Quincy; and at the 7-11 intersection. This will allow other drivers turn safely onto Quincy.
Free Right Turn

- For the westbound Quincy to northbound Parker Road traffic, a significant change could be made by changing the turn from the current 90 degree turn which slows larger vehicles a lot and just generally slows regular vehicles, if this was changed to a more sweeping right hand turn (think SB Parker to EB Arapahoe) all traffic could move quicker and increase traffic flow, there might be cost with claiming part of the parking lot and a change to the Parker Road median to make it higher.

- Pedestrian safety concern with free right turn.

- Worried about how pedestrians are going to be able to cross Parker to get to State Park if there is a thru lane from Quincy to Parker Road north.

- I prefer Alternative 5. With the dedicated turn lane from westbound Quincy onto northbound Parker, cars will speed up. The cars from northbound Parker turning into the shopping center first entrance will run into them. The first entrance should be closed.

- The dedicated right turn lane on Quincy would be helpful.

- Right turn from Quincy to Parker – make a turn lane and do away with no turn on red – makes traffic even more backed up.

- Do away with the “no turn on red” at Quincy.

- Impact of continuous right lane on business access in and out in shopping area on northeast corner of Quincy and Parker.

- Wonder about a light closer to McDonalds? A through lane – right turn from Quincy westbound to northbound Parker Road looks good. Will see how merging works as the McDonalds when that lane ends.

- A free flowing right turn at Quincy will make it more difficult to get out of Atchison Way. Traffic uses Atchison Way to avoid queue at Parker/Quincy and cuts thru neighborhood.

- Really no access out of Atchison Way, never a break in the traffic to get in.

- I live in the Pier Point subdivision at Atchison Way and Parker Road. I am concerned that allowing traffic to “turn on red” would reduce gaps in traffic that allow me to turn onto Parker Road in the AM. It is already difficult to turn there and traffic backs up on Atchison Way.

- Do not implement Alternative 5! Alternative 3 is better. A lane that is free flowing would essentially block my ability to leave my neighborhood on Atchison Way. We need the stoppage of traffic!

- Already impossible to get out of Atchison Way on Parker Road.

- Alternative 5 causes constant traffic northbound on Parker Road from westbound Quincy, which does not allow Pier Point residence access to their entrance or exit on S. Parker Road. Alternative 3 seems less invasive/impact to an involved in surrounding area.

- Concern about access at Atchison Way with Alternative 5.

- Alternative 5: Merge lanes at Parker may lead to potential crashes because of mixing with cars trying to get in/out of access points along Parker.

- Good ideas. New free westbound right turn lane would help, but there is bus stop right after the intersection. Need bus pullouts for the bus stops.
Gas Station Access

- I use this intersection daily. Remove the driveway from the gas station as cars that go around the corner on the green arrow slam on the brakes and turn right into the gas station. It is a hazard. Instead make access to the gas station via the main entrance by the 7-11.

- One major issue I didn’t see addressed was the southbound turns onto Quincy. I think that could fix some congestion, would be to force traffic to go to the light to get into the business on the southeast corner. Get rid of cut in of curb into gas station.

- Alternative 5 looks best, but don’t approve of in/out modifications at gas station with post office substation. This will encourage cars running thru parking lot.

- Not sure how this would be addressed but so many cars turn left onto Quincy from southbound Parker, then stop to turn into the gas station on the SE corner. That stops all traffic in that lane – need a different access.

- Is there any way to close the access at the gas station at Quincy? People taking immediate right turn after left turn off of Parker pose a problem.

- Close the Bradley’s gas station entrance on Quincy Avenue. People have to stop abruptly and unsafely due to drivers entering this gas station. They can still access Bradley’s at the protected entrance if they wish to fuel at Bradley’s.

Quincy/Atchison

- Consider traffic signal at Quincy and Atchison.

- Install a traffic light similar to the ones fire houses use to let fire trucks out safely at Atchison and Quincy. This would allow both Cherry Creek Racquet Club residents and the condo residents to safely turn left onto Quincy from Atchison. Equip this turn signal with a motion sensor that activates only when cars are detected at the turn lanes between 6 a.m. and 9 a.m. as well as 3 p.m. and 6 p.m. Alternatively, prohibit left turns during peak hours at this intersection (Atchison and Quincy).

- Adding a light at South Atchison Way with turn arrows and adding turn arrows to the shopping center exit lights would alleviate some of the problems. Timing of all the lights needs to be adjusted to accommodate traffic flow. Left turns onto Atchison Way and the street across from it are all but impossible during high traffic times. There are no safe ways to get to Atchison Way which has the heavy volume of individuals who live in the Pier Point developments. All of the residents for all seven villages (approximately 300 different units or homes) must get out either to Parker Road at the west end where there is no light and no left turn or at the Quincy exit which has no light and left turns to go east are dangerous at best. During high traffic right turns are blocked by multiple cars blocking the intersection. The signs to not block the intersection are completely ignored.

- Really bad access out of Atchison onto Quincy.

- Please find a way to stop traffic from blocking Atchison Way at Quincy. There is a sign prior that obviously has had no effect. Notification to Aurora Police has also had no effect.

Flyover

- Another band aid – 1,000’s of people moving building east as far as DIA – no plans to get more and better roads??!! We need more lanes and a flyover at Parker Quincy.

- Find the money and build the flyover sooner than later!!! Please do the flyover!!
• A band aid – We need a flyover!!! The small amount of peds and bikes crossing at Parker/Quincy hold up traffic by pushing the crosswalk light. Two or three people hold up 100 – 1,000’s of cars. Should have been fixed decades ago. Aurora is building east to Limon!! Lots of traffic.

Pedestrian/Bicycle
• Do not take out the crosswalk to Cherry Creek Park at Quincy/ Parker Road.
• Crosswalks for bikes and pedestrians need to be better marked along Parker and timing should be increased.
• Need to address the issue that the Parker/Quincy intersection is really unsafe and more people would want to go to Cherry Creek Park.
• Crossings across Parker and Quincy are bad.
• Lots of concern about making the crossing better at Parker/Quincy.
• Need some better access south of Quincy (sidewalks on either east or west side). Light at Temple is usually pretty good. Issue of people not merging and almost hitting.
• Lot of people like to run at Cherry Creek State Park. Wider sidewalk would be great but not sure how much good it will do.
• Close park entrance at Quincy and Parker. Do away with crossing light there which severely impedes and slows traffic.
• Close the ped/bike entrance to the park at intersection of Quincy and Parker. Walk it off!!
• Opening of Cherry Creek trail at Arapahoe entices bicyclist to enter park and cross through connecting with the trail.
• Take out the crossing. Who cares?? Thousands of cars – can’t be put off for a few walkers. Close the park entrance at Quincy and Parker. There are dozens of other entrances. This study was poorly planned and done.

Smoky Hill Road/Quincy Avenue Intersection:
• Prefer Alternative 5. (4)
• Alternative 5 – Ok I guess!
• Alternative 5 is better. Add overhead lighting like on Alternative 3 Parker Road.
• Alternative 5 is good for Smoky Hill northern movement without needing to make many lane changes.
• Either alternative looks to be a benefit to this intersection.
• My husband and I have been long-term residents of Aurora and commute almost daily from our home in Shenandoah northwest on Smoky Hill to the Smoky Hill and Quincy intersection. I’d like to request that city traffic planners consider extending the time that the light favors (or stays green) for traffic turning west onto Quincy from Smoky Hill. It is not uncommon for drivers in the three left lanes on Smoky Hill to wait a long while for the light to change—long enough in fact that cars turning east onto Quincy from Parker can make the turn and travel the two blocks to Smoky Hill and still catch a green light. Meanwhile, cars five and six deep in three lanes wait on Smoky Hill for the light to turn green so that they can make their turns. Cars rarely back up on Quincy going west, no matter the time of day. Your attention to this
would be much appreciated so that your Aurora transportation workers receive a message that this problem needs to be addressed.

- Getting rid of the island could also have a bad affect with someone on inside going wide when making the right turn from far right lane.
- I like the change of the right turn from Quincy west to Smoky Hill north/east.
- Alternative 5 turning – to allow faster speeds easier transition to Smoky Hill.
- Turn lanes on to Smoky will be a tiny help. Shocking this much time and money was spent on a study that won’t do much at all!

**Bicyclist/Pedestrian Treatments:**

Which treatments below would make it most comfortable to walk or ride at the study intersections? What other intersection improvements would enhance your comfort and safety as a bicyclist or pedestrian?

Signal phasing/timing changes (7)
Enhanced crosswalks (6)
Curb ramps (2)
Sidewalk improvements (8)
Raised crossings (5)
Wayfinding signage (1)
Other:
- More police presence at major intersections along Quincy.
- No left turn signal when walkers are walking.
- I want to keep crosswalk in at Parker /Quincy to get into Cherry Creek State Park.
- None of the alternatives take into account walker and cyclist. Alternative 5 really sucks!
- Should be concrete protective barriers on sidewalk south of Atchison Way to east bank shopping center where sidewalk fronts CDOT retaining wall.

**Grade Separated Crossing**
- Tunneled crossing.
- Grade separated crossing for pedestrians! (3)
- Tunnel under parker to the dam path.
- Why not doing the pedestrian bridge?!
- We have a jewel right there in the form of Cherry Creek State Park and bike access to Nine-Mile. Let’s develop that via an underground pedestrian crossing. I know that’s “long” term but I think it’s a must!
- You have to look at the pedestrian and bicycle traffic due to the State Park. A walkover would be a safe alternative.
- Would like a pedestrian bridge over Parker Road from bus stop to Pier Point neighborhood.
Please provide general suggestions and comments regarding this transportation study.

- Why isn’t signal timing a bigger part of alternatives?
- This study only benefits the drivers passing through the area. It’s a detriment to the businesses and residents.
- These “improvements” will do nothing for residents and businesses.
- All this is very little help. Needs more land, more lanes.
- Angry about spending money on this project and want the City of Aurora to fix I-225 between Parker Road and I-25. Parker Road has construction every two years and it’s ridiculous.
- Add ballot initiative – ask for tax increase.
- I’m a contractor and am one of approximately 40 who use Harbor Plaza for storage. I do not approve of Alternative 7 which wipes out Harbor Plaza businesses and sub-contractor use.
- Consider blocking the left turn out of the parking lot by the new McDonalds and starting the left turn lane to Quincy earlier.
- Consider eventual retail slowdown of the two malls – be prepared to annex parking lot and gas station properties to improve Quincy/Parker to standards of Hampden/Parker. Since it is not a transit hub, owners might be more amenable to land sale than owners at Regatta Plaza.
- I am so glad this is happening. It is so awful in the mornings. Dillon Way is constantly blocked and I can never get on to Quincy.
- Pier Point residents with homes fronting Parker Road do not want “enhanced roadway lighting” north and south of Atchison Way where residential units and homes front Parker Road. Pier Point properties offer spectacular views of the park and front range. The park deer often forage along the park side frontage of this stretch of Parker Road. At night, there is no lighting along this stretch of Parker Road, and I have spoken to several Pier Point residents who share my concern about future Parker Road expansion improvements including “enhanced street lighting”.
- Issue some bonds, save up until you have sufficient funding, partner with other municipalities who would also benefit from the improvements, or get state or federal assistance to make the large-scale improvements that were recommended in 2009. They really do sound like the best solution.

Project Communication

- Great communication!
- We very much appreciate the thoroughness of this process and the inclusiveness with the public. We hope it yields commensurately positive results.
- Thank you all for taking the time to make these changes!
- Really happy with the communication and the acknowledgment of the problem! But skeptical about solutions. Hampden actually helped but left turn lane from Parker to Quincy didn’t really help, since most people go on Smoky Hill.

Bicycle/Pedestrian/Transit

- Walking and biking across at Hampden is really good.
• No sidewalks on any side from Lehigh Avenue to trails on Parker Road right now. So this plan does not give any help. Parker Road has it every 2-3 years!

• Bus stop along west side of Parker north of Quincy poorly placed – too dangerous for pedestrians to cross Parker Road.

Medians

• Take out or reduce in size center medians that you do not maintain and remove dying trees and plants between Parker and Chambers!

• Maintenance of medians needed.

• Remove medians to gain lane?

Crashes

• Crashes: more fender benders than reported.

• Crash at Smoky Hill and Tufts Place: people coming south on Smoky go into left turn lane of the people going into Tufts Place.

• Always a crash at Chambers Lane and Quincy.

• The first thing would be more police giving tickets near those intersections. Every day I see many cars going west on Quincy running the red light at Parker Road before turning right and north on Parker. While lane changes would help, a great deal could be done now with more police at theses intersections.

• Without speed control, crashes will only get worse.

• Access point at first shopping center driveway (issues of wearing for people who want to get into shopping center and people who want to get out of that lane in through lanes).

• The problem is not the traffic...but is drivers. We can cure some of the serious accidents by enforcing speed limits and in some cases lower the speed limits entering the major intersections.

Speed

• Change speed limit back to 45 mph on Parker Road at Quincy in vicinity of the intersection – traffic travels too fast through Quincy southbound to signal at Temple.

• Speed on Parker, south of Quincy.

• Enforce the speed limit on Parker and westbound from Smoky Hill to Quincy.

• People already far exceed the speed limits. Improving flow will just allow them to drive even faster, making the area even more unsafe. If you’re going to improve the flow the speed limit should be reduced to 35 mph for safety, and speed limits need to be enforced. Put in multiple camera speed limit enforcements. That will slow people down!

• The major problem: people speed and take chances in turning in heavy traffic. We can encourage city Police, State Patrol and County Sheriff departments to enforce posted speed limits.

• No matter what intersection, increased police presence would slow down traffic.

• Reduce speed on both Smoky Hill and Quincy going west to reduce accidents at the Smoky Hill and Quincy intersection. Enforcing speed limits is essential!!
• We see police after an accident, usually after the Fire Department and ambulance all at the accident. Encourage the city to increase their traffic officers or patrol cars to be seen at high traffic areas and at certain intersections during the day. The cost of construction and obtaining “right of ways” is not now an option...but could enforce posted speed limits by police and place “Speed limit is (__ mph). You are driving (__mph)” signs.

Outside Study Area

• A traffic signal is needed at the intersection of Smoky Hill and Tufts. This intersection is heavily used during school days for access to Sagebrush Elementary School. There is heavy foot traffic crossing Smoky Hill at this intersection as well as vehicular traffic accessing the school. Many school buses and daycare vehicles as well as parents turn onto and off of Smoky Hill causing hazardous situations for elementary school students.

• Would be good to look at the numbers as a result of the road construction at Hampden where is traffic diverting to?

How did you hear about this meeting?

Received postcard mailer (13)
Email from project team (6)
Word of mouth/forwarded email (4)
Saw meeting flyer on display (2)
City or County’s email blast/social media (2)
New story - Sentinel or Aurora TV (1)
Public Meeting #3 Summary

June 23, 2016

Public Meeting #3 was held on June 23, 2016 at the Shalom Park Meeting Room (14800 E. Belleview Drive, Aurora 80012). The meeting was held from 4:30 – 6:30 PM in an open house format. Approximately 50 people attended the meeting. Following is a summary of comments submitted by meeting attendees on comment sheets, recorded by open house staff during one-on-one conversations with attendees during the public meeting, and submitted via email and on the project web page. This summary includes comments received through June 30, 2016.

How do you use the transportation system in the study area?
I live here (17)
I patronize adjacent businesses (8)
I work here (0)
I commute through (5)
Other (2)
• Own building in study area
• Bicycle to park

How did you hear about this meeting?
Received postcard mailer (14)
Email from project team (3)
Word of mouth/forwarded email (1)
Saw meeting flyer on display (0)
City or County’s email blast/social media (2)
New story - Sentinel or Aurora TV (0)
Other (1)
• Forwarded email from HOA Leader

Please provide feedback regarding the study recommendations.

Parker Road/Quincy Avenue Intersection Improvements

Do Not Block Markings
• Northbound Parker Road at E. Rice Place should have “do not block intersection” signs to allow vehicles to exit Rice Place to Southbound Parker Road.
• Enlarge “do not block intersection” sign at light by 7-11 and mattress store. Double fines.
• Larger “do not block” sign needed at shopping signal WB.
• There is still blockage at the shopping center intersection. How is this addressed?
• I especially appreciate the DO NOT BLOCK intersection markers at Quincy & Atchison.
• Appreciate new XXX in intersections at Quincy & Atchison.
• Thanks for the Do Not Block markings at Atchison.
• At Atchison Way the intersection is always blocked by cars in the morning and even on Saturday. I hope the “Do not block” marking will help along with the 3 right hand turn lanes.
• “X” in intersection at Atchison is a good idea.
• Do not block intersection pavement markings don’t help.

Signal Timing
• Timing with light at 7-11 is critical.
• Suggest you coordinate the timing of the light at the 7-11 on Quincy so it cannot turn red while Parker Road traffic is turning east on to Quincy. Backups occur routinely with this light. Rear-end collisions can easily happen.
• Timing of signal at 7-11 needs coordinated with Parker signal.
• Want to know more about the signal timing.
• I like the recommendations you have now come up with thus far. Quincy to 24 Hour Fitness is how we usually come through, and hopefully the traffic lights (which seem to back up Quincy) will be worked out better.

Triple Right Turn Lanes
• Great idea for the dedicated triple-right turn from WB Quincy to NB Parker and taking some land from the Furniture ROW parking lot will allow for a smoother transition with the “softening” of the right turn.
• Currently the double right turn at this corner is very tight and it significantly slows down the traffic.
• Good idea to have three right turning lanes onto Parker going north.
• Triple right makes sense.
• Right turn lanes on Parker Road should be through/right.
• Triple right turn at Parker is good.
• Worried about crossing across the triangle (bikes/pedestrians) and the right turning traffic from Quincy to Parker. Right now there are “no turn on red” signs, but people still turn right.

General Comments Regarding Improvements
• Looks workable. More dangerous potentially for walkers/bikers going to park.
• This is a definite improvement for us.
• Great plan – it will improve traffic flow and it is much safer for pedestrians.
• The proposed recommended improvements look good and I believe will definitely improve the traffic and pedestrian access.
• The extension of Quincy Avenue near the park across Parker Road really needs their own traffic lights. Their impatience is dangerous for everybody else.
• The movement going EB on the west side of Parker almost gets hit in evening time by WB Quincy traffic. Need to address conflict.
• Anything would be an improvement and sorely needed but what’s proposed look pretty good.
• Good to see complete traffic halt to cross Parker and enter park (wish you had money to create overpass similar to Hampden/Parker).
• Shared WB left turn lane is going to back up traffic. It would be good to have two left turn lanes here.

• I think a changing of the lights for traffic on Quincy getting onto Parker would help traffic. If an overpass at Parker over Quincy (like Arapahoe & Parker) would help traffic from being held up on Quincy, it would help a great deal. Residents south and east cause a great deal of congestion.

• I am just wondering why, on the east bound lanes of Quincy, there are no recommendations on the access points to the shopping center on the south side. As a commuter who takes both east and west bound on Quincy, I find it interesting that there are no recommendations for that as people turning in to the gas station or liquor store there often back up the right most lane of the left turn lanes from Parker.

Smoky Hill Road/Quincy Avenue Intersection Improvements

Eastbound Quincy to Southbound Smoky Hill Movement
• We like the improvement for right turns from Quincy to Smoky Hill Road.
• Good idea that you are “softening” the right-turn from EB Quincy to SB Smoky Hill. The current tight turn causes traffic to back up significantly.
• Persons driving in the right lane SE bound do not have to stop. This means a continuous flow of traffic SE bound on Smoky Hill Road. People trying to get on Smoky Hill at Radcliffe have difficulty trying to go SE on Cross to go NW on Smoky Hill.

Northbound Smoky Hill to Westbound Quincy Movement
• Revising NB Smoky Hill to WB Quincy with 3 dedicated left-turn lanes is a great idea!
• I think that the traffic flow northbound on Smoky Hill approaching Quincy needs signage, back at least 2-3 blocks letting traffic know that the far right lane is a right turn lane only. It requires a shift to the left to accommodate traffic merging to turn left at Quincy.
• I think the 3 lanes to 3 lanes seem like a good idea.
• Looks good especially the triple left turn lanes onto Quincy.

Bus Stop
• Bus stop after Atchison Way from east to west may cause more backups than anticipated.
• Bus stop on Parker south of the Parker/Quincy intersection will not have a crosswalk. Three walks will have to be taken to get to SE corner of intersection.
• Removing bus stop excellent idea.
• Great idea to eliminate the bus stop on SB Smoky Hill (west side).
• Good to move that bus stop.

General Comments Regarding Improvements
• Appears to be a safer configuration.
• What you have designed should be helpful.
• Great plan. Afternoon traffic will flow and decrease the confusion of lane usage. Great idea!!! This will help.
• Looks good.
• Very feasible.
• Looks encouraging.
• Right turns will be held up for light at Carson southbound if turning car ahead (big morning problem).
• I think the intersection is good and needs no improvements.
• Crosswalk clarity important.
• The crosswalk here is similar to the one at Parker/Quincy. The west side has two lanes of continuous right turn. It is impossible to cross there now and always has been. Foot traffic should cross on the east side of Quincy, then go west toward Parker on the north side of Quincy.
• Need a noise wall at Smoky Hill & Quincy. Motorcycles are the worst. City should meet State requirements for noise mitigation (Pheasant Run).

**Bicyclist/Pedestrian Treatments:**

**Will the study recommendations enhance comfort and safety for bicyclists and pedestrians traveling at and between the study intersections? Are there other treatments you’d like to see implemented in the study area?**

• I like the new pedestrian refuge area at Quincy/Parker.
• I like the crosswalk on the north side of Parker Road & Quincy.
• The designated crossing/light at Quincy & Parker will definitely help as will a wider sidewalk.
• The idea to put signal lights and pedestrian crossings at the shopping center corner and pedestrian crossing on the side leading directly into the Cherry Creek State Park is excellent and much safer.
• Pedestrian bridge would be great but understand impact to parking at shopping center.
• The crosswalk on the north side of Quincy/Parker to the park is a mistake. A lot of people want to access the park by foot or on a bicycle and park in that parking lot to avoid paying park fees. To cross on that side across three lanes of right turning traffic is hazardous and pushing the crosswalk light stops all the traffic you want to get moving. There is less traffic turning left here. Move the crosswalk to the south side.
• Your “recommended improvements” shows a pedestrian crosswalk (east-west) on the north side of the Parker & Quincy intersection. BIG MISTAKE! This was removed years ago because it impeded SB Parker left-turns to EB Quincy.
• Appreciate new pedestrian crossovers.
• Widening sidewalks looks good.
• We need wider sidewalks, more bike lanes, and better traffic control.
• Need signs regarding State law to stop for pedestrians in crosswalk.
• Traffic signal poles are in the middle of the sidewalk on the south side of Quincy – terrible for pedestrians.
• I wish there was a dedicated spot for bicyclists because they just come up behind me – even with a warning the traffic is so loud it’s hard to hear them.
• There doesn’t seem to be any bicycle lanes. This probably indicates considerable bicycle traffic on the sidewalks as traffic volume may make it risky to ride on the streets.
• Yes this will help enhance the safety for pedestrians and bicyclists. This is a great improvement for the park access on a bicycle.
• I believe the recommendation for this phase is good and does accommodate the movement of bicycles and pedestrians.
• Yes it looks like it will.
• Yes.
• Yes. Sidewalk signage (sharrows?) on sidewalk to indicate two way bicycle lane since no allowance for bike traffic is on south side of Quincy. Continue 10’ wide & separation all the way to Chambers – until eastbound cyclists can cross to eastbound sidewalk.
• No.
• The crosswalks will undo all you’re trying to do.

Please provide general suggestions and comments regarding this transportation study.

**Neighborhood Access**

• A signal light at either Dillon Way/Dillon Street or Eagle. In the morning from 6:30 am 8:30 am it is impossible to get out on Quincy to go east or west. I wait 10 – 15 minutes to get on to Quincy Avenue. Also in the evening from 3:30 pm – 5:30 pm.
• I still would wish for lights at both Atchison Way intersections. There are not enough gaps to safely access Parker Road because of the heavy traffic on Parker Road, when traffic is not stopped at Quincy.
• Looks great. Is there anything to be done to stop the intersection blockage at Atchison? Police in the morning?
• Evergreen trees at Dillon block visibility.
• Need a traffic signal at Dillon Way/Quincy Avenue.
• Want do not block marking off of Parker, south of Quincy at the cul-de-sac.
• Gap concern at Tufts: will this change negatively for the residents exiting the neighborhood making a left?
• Timing of lights is key. Getting out of the Quincy Hill area can be extremely difficult in the afternoon especially because of traffic flow from Quincy onto Smoky Hill. Then when there could be a break the traffic on Smoky Hill from Chambers is coming. It can be very scary.

**General Comments**

• I think the money is well spent for this project.
• This was a good process to go through!
• This will improve traffic flow in this area and the surrounding neighborhoods. Thank you!!
• I liked it and did provide good information. My hope is that these studies continue and further improvements are on track in the future.
• I think it’s a good idea. Most drivers are courteous but some are impatient. Crossing Parker Road to go to Cherry Creek State Park is especially worrisome.
• Long overdue. Everyone answered questions. Happy to see number of citizens participating. Assuming the City will continue to keep us posted. I use Quincy (Buckley – Chambers – Parker) a lot. Consciously avoid Quincy/Parker at peak traffic times.
• If a bridge of north and southbound Parker were placed over Quincy that would help congestion.
• Want a pedestrian bridge crossing Parker Road.
• Too much money for minimal improvement.
• Didn’t get first two postcards.
• I don’t know what you want to develop on the SW corner of Parker/Quincy but anything will be a problem.
• I am interested in knowing if the proposed Walmart online order distribution center planned for the SW corner of Quincy & Parker has been taken into the consideration of this study. Further, if their plans cannot coincide with the needs of this intersection such that Walmart bears some of the cost involved in improving the intersection.
• Too much development to the south.
• 45 mph on Parker road, not 55 mph.
• No breaks in traffic on Smoky Hill – need signals timed to allow unsigned turns.
• Why no six lane at Parker at Chambers? Backs up.
• Safety is really important and need to slow people down!
• Left turn arrow at Chambers & Quincy NB.
• How will the parking lots function along the west side of Parker Road with the addition of sidewalks (e.g., business north by Emerald Isle, Bait Shop)?
• Has anyone from the project team sat at the intersection for a half hour and just observed the traffic at different times of the day? I go through the intersections several times and day, and here is what I have noticed. The light just east of Parker Road needs to be adjusted! It turns green to often (and stays green too long) for the automobiles that are coming out of the businesses near the furniture row and 7-11.
• I went to the last meeting, and all of our requests, questions, suggestions, wants and needs were IGNORED. The intersection is a disaster with more than quadruple the number of vehicles going thru there, than designed for, as Aurora continues to build east clear to the Kansas border. We need a flyover, just like at Parker and Arapahoe, and that idiotic bike/pedestrian entrance to the state park CLOSED as those people use the crossing push button and throw the lights off. Hundreds of cars put off, waiting, and inconvenienced for one or two people on a bike or walking a dog. Why bother to have a meeting, when you already know what you are going to do, and are going to ignore the needs of those that use this horrible intersection daily and pay taxes (your salary)!??!?!? Shameful at best.