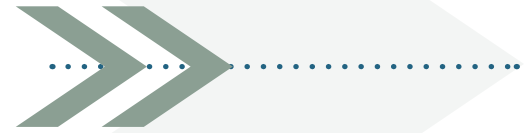


03

# Community Engagement



The study team coordinated three rounds of engagement during the planning process. Each involved coordination with the Steering Committee, activities with the public, and social media. The appendix includes meeting notes and other engagement details.

## Round One

The results of the walkability analysis were the focus of the first round of engagement. The study team presented it and a driver's view of the corridor at a public open house on June 20, 2017 at the North-East Branch of the Kansas City Public Library and 21 people attended. During the meeting, participants shared comments about issues walking along or crossing Independence Avenue, best aspects of the recently improved Benton Boulevard and Independence Avenue intersection, most important intersections to improve (based on the Invest Northeast recommendations), and more. Meeting attendees shared their comments by talking one-on-one and in small groups with study team members. They also used a combination of dots, markers, post-it notes, and special chips to illustrate their comments on the maps provided. The used yellow chips to indicate opportunities, red for issues, and green to indicate spending or investment priorities.





# Feedback from First Public Meeting





# Feedback from First Public Meeting (continued)



## Round Two

The second round of engagement involved a workshop with the Steering Committee on July 12, 2017 at the Northeast Chamber of Commerce. During the meeting, committee members helped the study team identify goals and strategies that they could be apply to the corridor in an effort to improve pedestrian safety. They also built a traffic-calming toolbox, explored candidate locations for potential tools, and developed improvement concepts based on them.

The toolbox included curb extension, islands, medians, streetscaping, cross-sections, intersection realignments, and “other” items. Committee members commented that the “other” toolbox items should include road diets, respond to nearby development needs, potentially a pedestrian bridge (expensive) near the Kansas City University of Medicine and Biosciences where crossing is difficult, consider existing case studies, such as the recent 20th Street Reconstruction and Streetscaping Project in Kansas City, that may be applicable to the study area.

At the conclusion of the meeting, committee members had crafted improvement concepts by corridor segment as described in the Preliminary Concepts Chapter.

Additionally, the study team organized the first of two “pop-up” meetings to gather feedback on the concepts from community members. The “pop-up” was held during the “One Avenue, Many Americans” Art Work in Independence Plaza Park on August 26, 2017 in coordination with the Independence Avenue Community Improvement District. The study team engaged 80 people during the event. Participants commented about their difficulty crossing Independence Avenue, the need for crosswalks and pedestrian signals. Others focused on the Olive Street intersection, suggesting a traffic light, crosswalks, medians, and pedestrian crossing signals and/or signage to help respond to traffic accidents and pedestrian needs.





## Round Three

The Steering Committee met for the second time on November 14, 2017 at the Northeast Chamber of Commerce and reviewed the preferred improvement concepts for the corridor by segment and intersection. They advised the study team to continue developing the concepts for Prospect Avenue, Topping/Hardesty Avenue, and Woodland Avenue but proceed with the remaining ones. The group asked the team to explore bump-outs for Prospect Avenue parking, along with straighter crosswalks, and solutions for northbound traffic movements. They also requested that the team show the proposed Woodland Avenue vacancy to correspond with the Kansas City University of Medicine and Biosciences anticipated expansion. In addition, the committee asked the team to review bus stop positioning at Topping/Hardesty Avenue.

The study team developed a second opinion survey during the third round of engagement to gather feedback on the elements included in the preferred improvement concepts. They organized a second “pop-up” meeting on December 16, 2017 at Cosentino’s Price Chopper to discuss them with the public and begin gathering survey responses. They engaged over 100 people during the event. Many commented about pedestrian safety issues that related not only to needed capital improvements, such as lighting and crosswalks, but also police enforcement. All and all, 226 people responded to the survey, providing responses online, in person, and hardcopy. Respondents typically described themselves as residents, workers, transit riders, pedestrians, and/or bicyclists.

### Survey results indicated that:

- » 87% of respondents said improving safety for all Independence Avenue travelers, including pedestrians, bicyclists, motorists, residents, businesses, and visitors, was very important
- » 80% of respondents said having sidewalks along Independence Avenue that are in good repair was very important
- » 79% said it was somewhat important or very important to provide a bicycle path along Independence Avenue
- » 77% said it was somewhat important or very important to fix intersection alignment issues; the balance said it was not important or were unsure
- » 93% said it was somewhat important or very important to add other pedestrian safety improvements, such as landscaping, crosswalks, curb extensions, and/or pedestrian crossings signs to Independence Avenue
- » 94% said it was somewhat important or very important to target pedestrian safety improvement to specific locations of Independence Avenue



**Responses also included comments expressing:**

- » Preferences for and against bike lanes (buffered or painted)
- » A need for improvements that create smoother traffic flows
- » Concerns about truck traffic
- » Issues with pedestrians crossing Independence Avenue
- » Issues with multiple modes of transportation operating along Independence Avenue at once
- » Issues at Benton Boulevard related to its connection to other major routes and improvements needed east of Benton, such as to Van Brunt Boulevard, to increase user-friendliness, include green space, and move traffic
- » Concerns about crime and safety

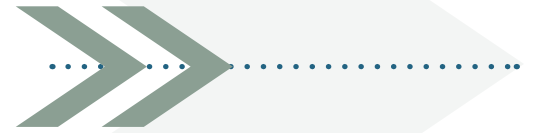
## **Final Steering Committee Meeting**

The study team held the final Steering Committee on January 23, 2018 at the chamber's office to review and discuss final recommendations. This involved context sensitive sub-sections (urban, general urban, and suburban), improvements for minor intersections, and cost estimates for major improvements. During the meeting, the Steering Committee expressed supported for developing a connected bicycle network within the study area. They also discussed implementation priorities, funding, and construction in more detail.

Committee members said improvements in the urban sub-section should be top priority because they could be coordinated to occur with the City's scheduled mill and overlay of Independence Avenue between Forest Avenue and Paseo Boulevard. They also said the urban section (Forest to Paseo) could be improved while funding sources are pursued for higher cost projects at Van Brunt Boulevard, Wilson/Topping Avenue, and Hardesty Avenue. They group agreed that such a coordinated project could be a catalyst for the improvements recommended to occur within the remaining sub-sections.

04

# Toolkit for Pedestrian Safety Improvements



The study team talked with community members about the range of improvements that could help make walking across and along Independence Avenue from Forest Avenue to Ewing Avenue safer. They also coordinated with the Steering Committee to develop improvement concepts by applying potential traffic-calming tools to the road.

**The tools included:**

**Curb extensions:**

Using existing pavement, the curbs at street intersections are extended out into the street to reduce the crossing distance for the pedestrian. This is done without impacting the through lanes. Most times, curb extensions are installed where on-street parking is permitted. This assists to define the boundaries for on-street parking.

**Short medians:**

Independence Avenue has many offset intersections. The offset intersections make crossing the street difficult because a pedestrian must be aware of traffic movements from two separate nearby intersections. To reduce some of this confusion caused by the offset, the short median provides a mid-street refuge and allows the pedestrian the ability to concentrate only on one intersection. Short medians still allow all traffic movements.

**Islands:**

Turning islands are constructed where feasible with the intent of reducing the crossing distance and providing a mid-road refuge for the pedestrian.

**Long medians:**

Similar in concept to the short median, the long median extends across the width of the side streets. This eliminates left turning movements into and out of the side street while providing a mid-street refuge for the pedestrian. The mid-street refuge allows the pedestrian to focus on one through movement at a time.

**Crosswalks:**

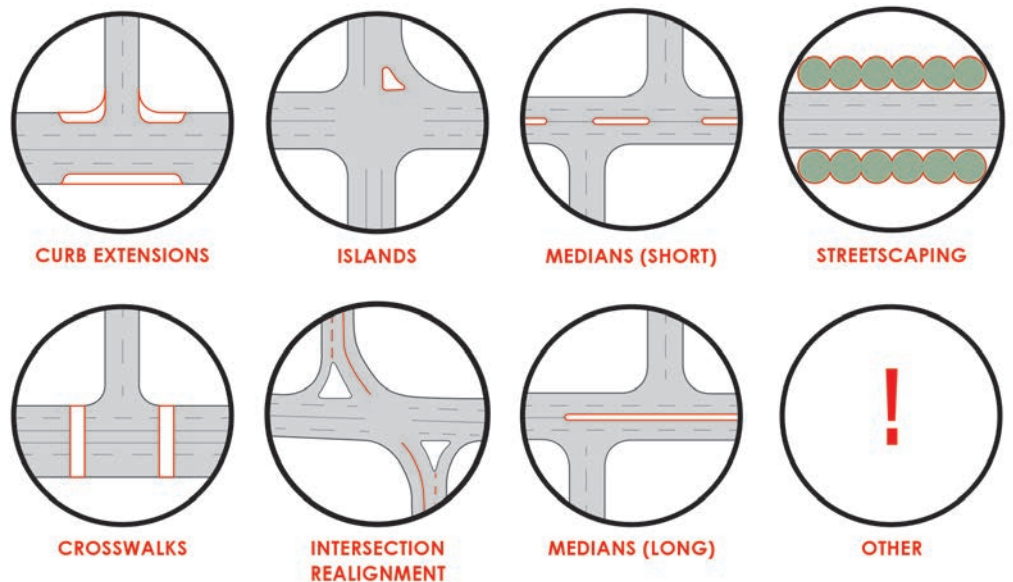
Crosswalks are constructed on either side of a side street. These crosswalks are signed only and will not include any signalization

**Intersection realignment:**

Where feasible, the offset streets are realigned to provide a standard four-way intersection. The City took a similar approach at the Benton Boulevard intersection.

**Other:**

With Steering Committee comments in mind, "other" toolbox items included road diets, respond to nearby development needs, and more.



## Improvement Concepts

The Steering Committee and study team proposed a series of feasible candidate locations for the tools in the tools box and organized their placement by corridor segment while referencing the results of the walkability analysis, local knowledge, and other findings. Ultimately, the following six pedestrian safety improvements concepts were developed for the corridor segments:

### Segment A to B (Forest Avenue to Gardner Avenue):

Conceptual improvements could involve the following traffic-calming tools: realigning the Woodland Avenue intersection and adding crosswalks to it, installing bump-outs at Maple Boulevard, and narrowing Independence Avenue.

### Section B to C (Garfield Avenue to Gladstone Boulevard):

Conceptual improvements could involve the following traffic-calming tools: adding crosswalks, bump-outs, streetscaping, and short and long medians to various locations along Independence Avenue. Realigning the Prospect Avenue intersection is also included.

### Section C to D (Gladstone Boulevard to Norton Avenue):

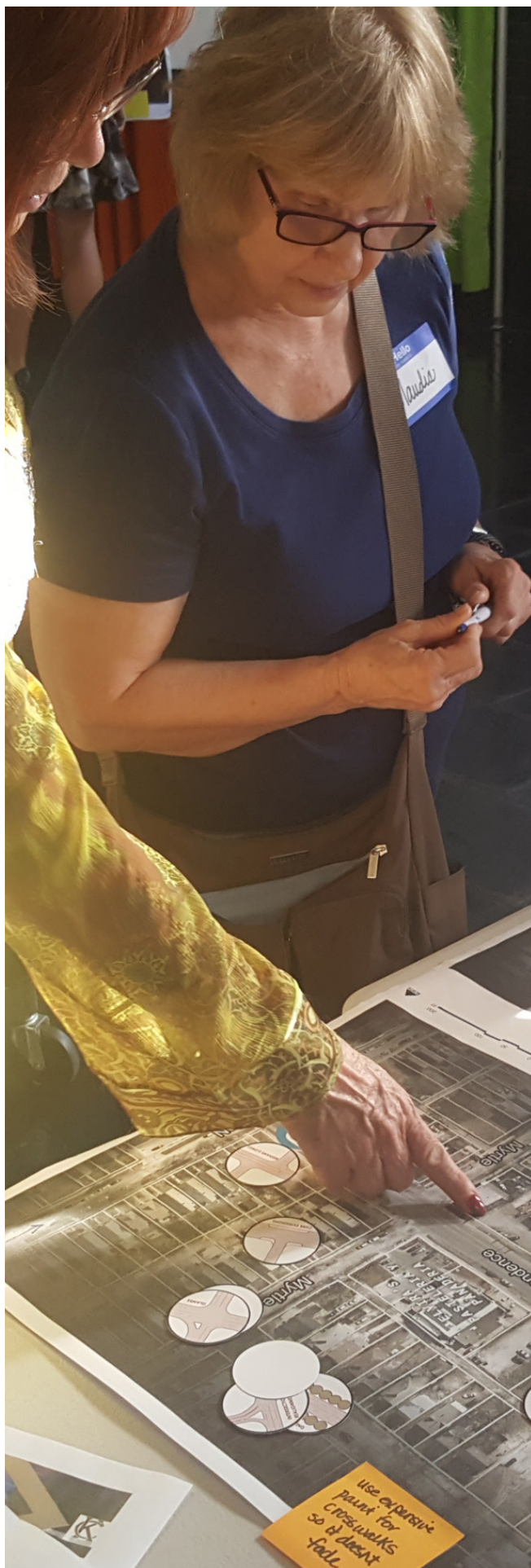
Conceptual improvements could involve the following traffic-calming tools: adding islands, streetscaping, short medians, crosswalks, and bump-outs to particular locations along Independence Avenue. Realigning the Myrtle Avenue intersection is also included.

### Section D to E (Quincy Avenue to White Avenue):

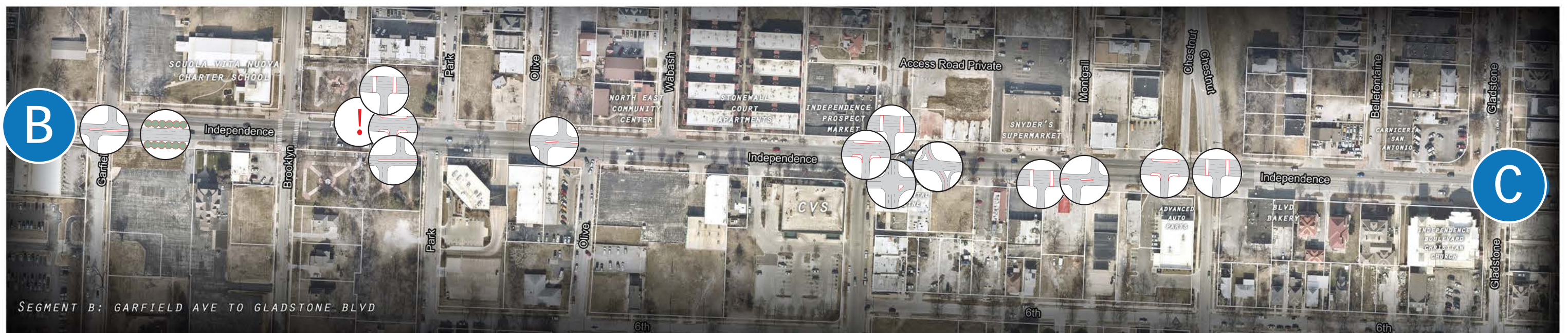
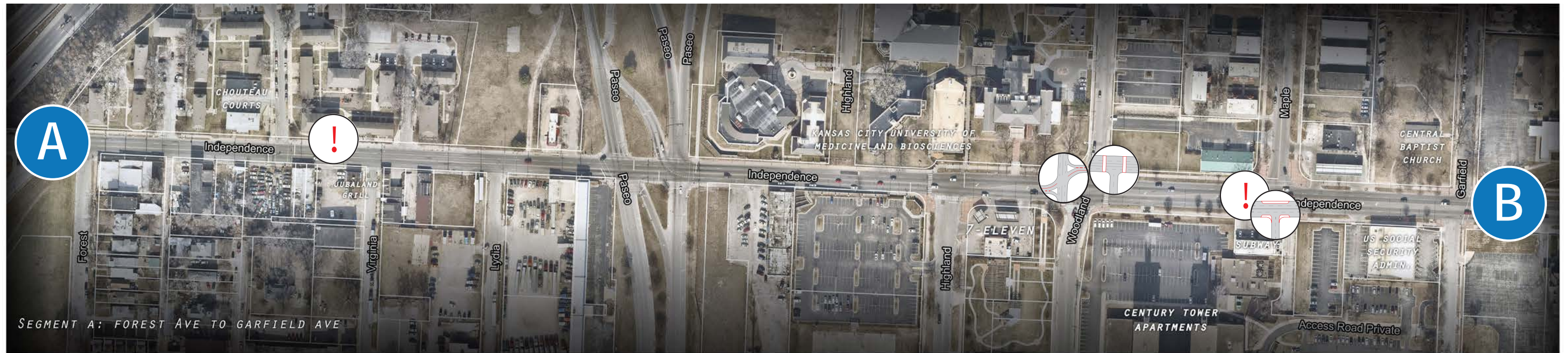
Conceptual improvements could involve the following traffic-calming tools: realigning the Denver Avenue and Oakley Avenue intersections and improving the Wilson Road intersection, so it includes crosswalks, streetscaping, and a pedestrian ramp.

### Section E to F (White Avenue to Ewing Avenue):

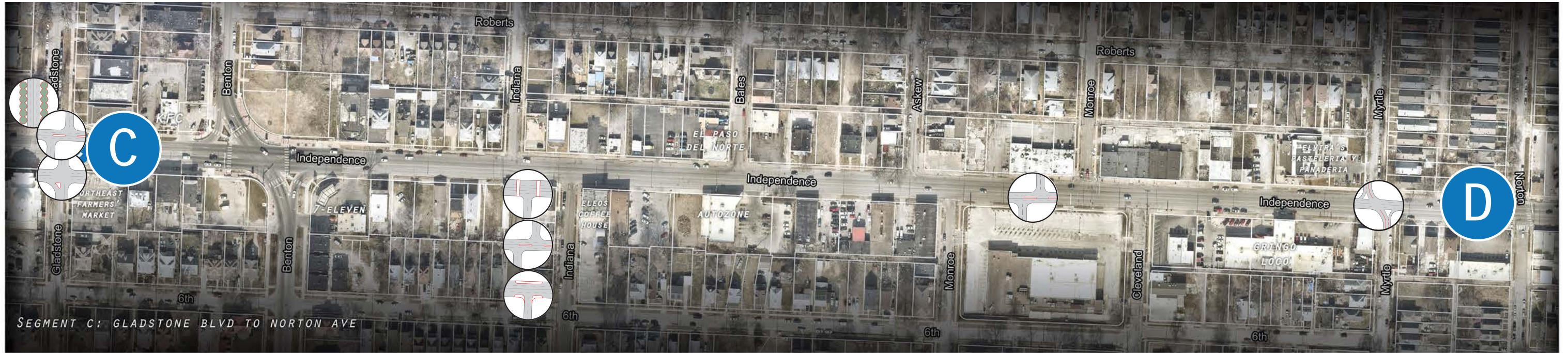
Conceptual improvements could involve the following traffic-calming tools: adding crosswalks and short and long-medians to Independence Avenue as well as realigning the Beacon and Ewing Avenue intersections.



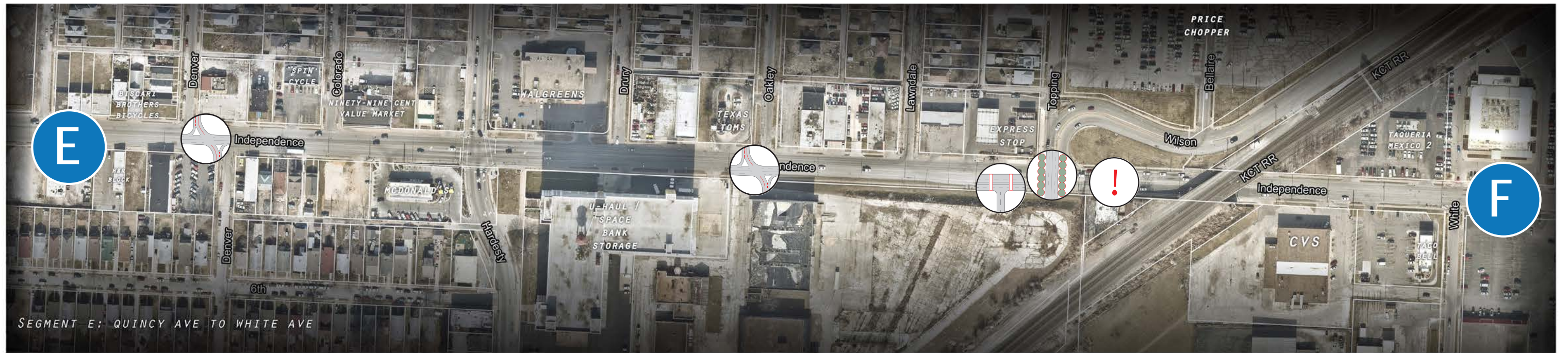
# Improvement Concepts



# Improvement Concepts (continued)



# Improvement Concepts (continued)



# Context Sensitive Design

Keeping in mind the Steering Committee’s comments and findings from other analyses related to the different development characters present in the corridor, the study team proposed three distinct corridor areas for Independence Avenue.

## Urban (Forest Avenue to Paseo Boulevard):

This is generally a high intensity area with high-density residential and workplace uses. Entertainment, civic and cultural activities also utilize the area. Attached buildings form a sense of enclosure and continuous street/wall landscaping are created within the public right-of-way. High pedestrian and transit activity occur. Buildings generally have no setbacks. They are oriented to the street and placed at the front of property lines.

## General Urban (Paseo Boulevard to Benton Boulevard):

These areas have a mix of housing types. Buildings are predominantly detached, and a balance between landscape and buildings exists. Some attached units accommodate local commercial and civic activities. Moderate levels of pedestrian and transit activity can be expected.

## Suburban (Benton Boulevard to Ewing Avenue):

These areas are typically comprised of single family residential units, big box stores and detached buildings with landscaped yards. Varying front and side yard setbacks are typical.

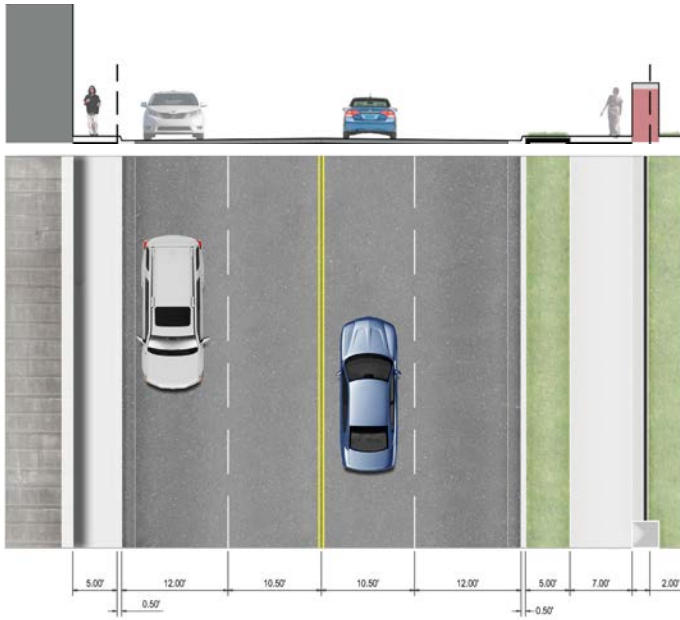
Assuming bicycle accommodations via the City’s Paseo Gateway and Lexington/Gladstone bicycle projects, they then developed corresponding street sections:

- » **Urban:** 3-lane section, widened sidewalk and potential for a bicycle facility.
- » **General Urban:** 4-lane section, with increased pedestrian facilities and turn lanes at major intersections.
- » **Suburban:** 4-lane section with turn lanes at major intersections and improvements for pedestrians, such as shaded sidewalks and shorter crossing distances.

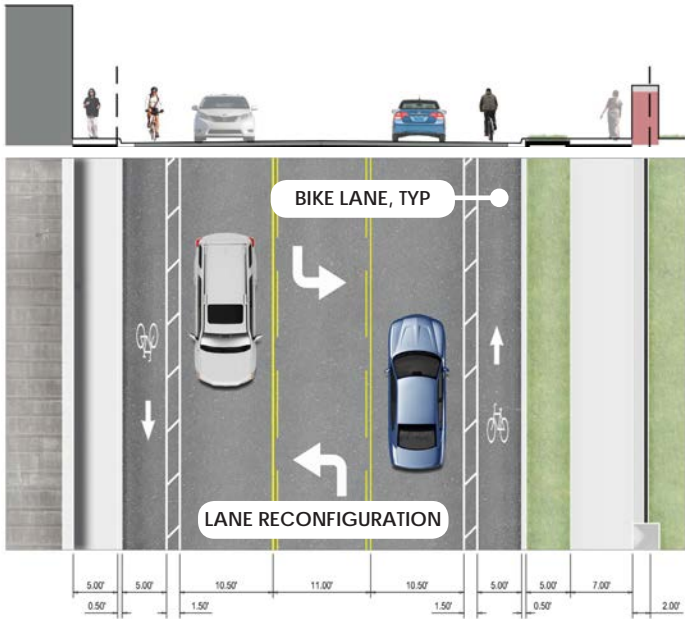




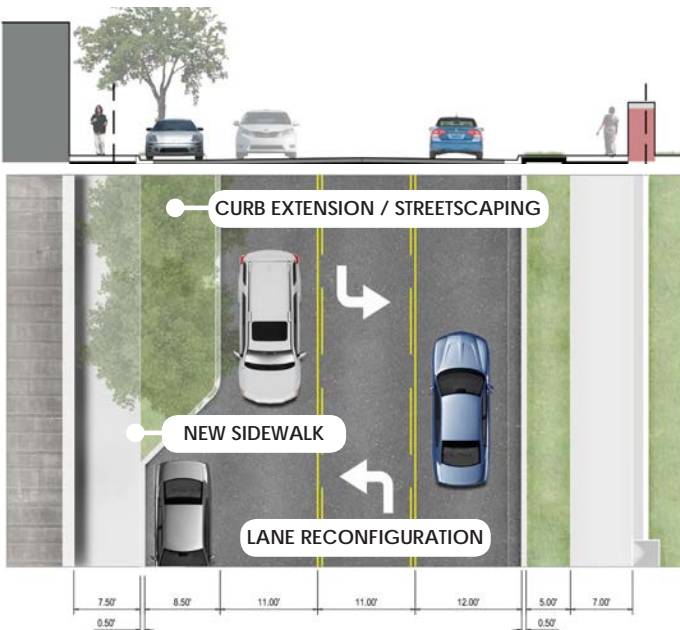
EXISTING



PROPOSED OPT. 1



PROPOSED OPT. 2



URBAN: FOREST TO PASEO

## Urban Section

The cross-section of Independence Avenue drops from a four-lane section to a three-lane section between Forest Avenue and Paseo Boulevard. The current four-lane section has no turn lanes, while the three-lane section has a through lane in each direction and a central two-way left-turn lane. The western limit of the study area is Forest Avenue. City staff and community leaders are supportive of carrying the three-lane section further west, towards downtown Kansas City.

### Advantages:

The three-lane section very closely reflects the operations of a four-lane roadway. The resulting width of roadway is 33-feet and presents the most pedestrian-friendly environment. Other advantages include provision of a central turn lane that allows easy access to adjacent properties, room within right-of-way to construct a bicycle facility or provisions for on-street parking.

### Disadvantages:

There is a minor loss in capacity at the intersections. Currently, two through lanes carry traffic across Independence Avenue when the inner lane is clear of left-turning vehicles. This second lane of through capacity is lost with the three-lane option. The 3-lane option may also require costly signal adjustments at Tracy Avenue.

The study team presented two options to the Steering Committee. The first option retained parking on the south side of Independence Avenue, while the second option eliminated parking and added a separated bike facility on both sides of Independence Avenue. Committee members supported the bike lane option, as it provided a continuous network of bicycle lanes in conjunction with the Paseo Gateway project and the Lexington/Gladstone bicycle project

## City Resolution No. 140982

December 2014 the City Council adopted Resolution No. 140982, directing the development of a high-level road-diet analysis for certain City streets. Each street was undivided and had four or more lanes. The purpose of the analysis was to determine the suitability of converting one or more of these streets into reduced-lane streets via a restriping and/or resurfacing program.

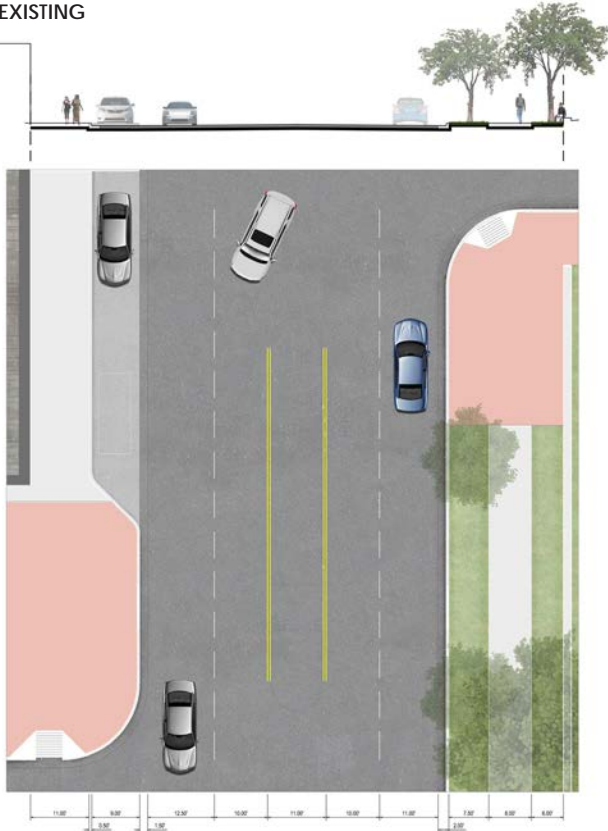
Further, the Resolution states that the Federal Highway Administration (FHWA) has found that road diets appear to have minimal effects on vehicle capacity because left-turning vehicles are moved into a common two-way left turn lane. For road diets with annual average daily traffic under 20,000 vehicles, traffic congestion did not increase to the point of diverting traffic to alternative routes. This resolution is included with the appendix.

Although Annual Average Daily Traffic data was not available for this study, the study team has assumed 10-percent of the Daily Traffic Volume is the bi-directional peak hour volume. At Tracy Avenue, which is in the middle of the urban corridor, the bi-directional peak hour volumes from **Exhibit 2 (see appendix)** on Independence Avenue are as follows:

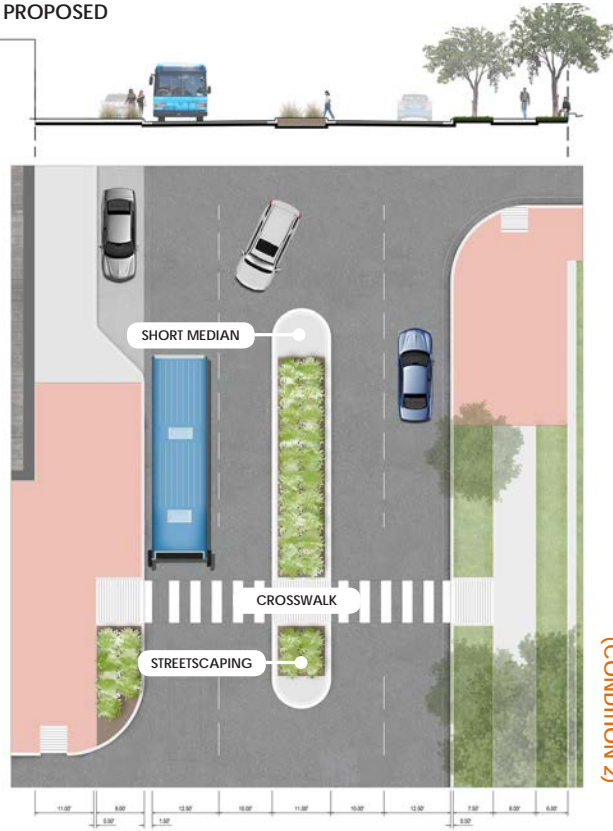
- » **Morning peak hour:**
  - **East of Tracy Ave:**  $414 + 207 + 7 = 628$  vehicles
  - **West of Tracy Ave:**  $207 + 414 + 4 = 625$  vehicles
- » **Afternoon peak hour:**
  - **East of Tracy Ave:**  $439 + 574 + 13 = 1,026$  vehicles
  - **West of Tracy Ave:**  $574 + 439 + 10 = 1,023$  vehicles.

Therefore, to estimate the annual traffic, the study team used 1,026 vehicles as the highest peak hour volume. Assuming 10% of the daily traffic is the bi-directional peak hour volume, the daily traffic was estimated as  $1,026 * 10 = 10,260$  vehicles. The result was well under the 20,000-vehicle limit from the City Resolution No. 140982.

EXISTING



PROPOSED

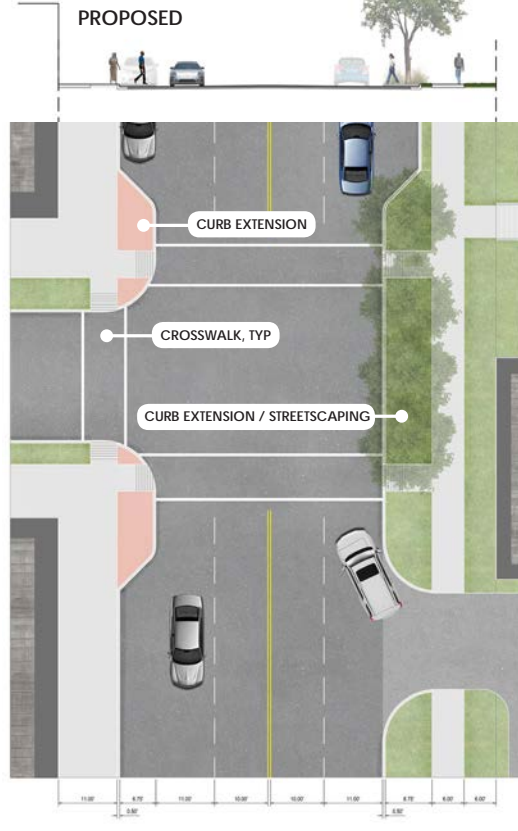


URBAN / GENERAL: PASSEO TO BENTON  
(CONDITION 2)

EXISTING



PROPOSED



SUBURBAN: BENTON TO EWING

## General Urban Section

The general urban section extends between Paseo Boulevard and Benton Boulevard. Kansas City recently completed renovations at the Benton Boulevard intersection that included realignment of the north and south legs of Benton Boulevard, construction of left turn lanes and islands that increase the efficiency of vehicular movements while enhancing the pedestrian accessibility.

For the most part, Independence Avenue has a central two-way left turn lane (TWLTL) between Paseo and Benton Boulevards. Using the tool kit, Steering Committee members selected the construction of a median refuge and crosswalks where the TWLTL is not being used and a short median with a crosswalk where the side streets are offset. The cross-sections show the proposed condition.

## Suburban Section

The suburban section of Independence Avenue is from Benton Boulevard to Ewing Avenue. This section of Independence Avenue has a four-lane section with parking permitted on both sides of the street. Using the tool kit, the Steering Committee members selected curb extensions for most of the un-signalized intersections. The curb extensions assist in defining the boundaries of parking while reducing crossing distances for the pedestrians.

## Specific Intersections

With help from the community and Steering Committee, the study identified a series of specific intersections that would benefit from pedestrian safety improvements. Some of the locations would involve costly fixes requiring regional coordination for funding. **Exhibit 10 (see appendix)** shows the identified improvements at each of these intersections.

### The intersections include

#### Paseo Boulevard intersection:

The City's Parks and Recreation Department is completing the project as shown in **Exhibit 6 (see appendix)**

#### Woodland Avenue:

This is a signalized intersection. The Steering Committee and members of the public identified a need for intersection realignment, crosswalk addition, and the construction of islands. Improvements should be coordinated with KCUMB expansion.

#### Prospect Avenue:

Steering Committee members identified a need for curb extensions, intersection realignment, crosswalks, and refuge islands. Further, Left turn lanes on Prospect Avenue are desired as a capacity addition.

#### Olive Street:

The public identified a need for a short median with a crosswalk and improved pedestrian signage and/or signal at this location.

#### Myrtle Avenue:

The Steering Comment and public expressed a desire for intersection realignment of the north and south legs of Myrtle.

#### Van Brunt Boulevard:

As identified in the crash analysis, a major factor for reduced safety at this intersection is the offset northbound approach. Steering Committee members and the public both desire improvements at Van Brunt Boulevard. Committee members specifically commented about the need for intersection realignment of the north and southbound legs. Further, on the south leg, they desired to improve access management by using a median. Relocating the median-park to the east side of the new south leg extends the green space/streetscaping. Installing a mini traffic circle at E. 6th Street provides the necessary intersection control and the ability to line up the offset approaches of Van Brunt Boulevard. Stakeholders also wanted to install left turn lanes on Independence Avenue. Accomplishing the task may be possible by restricting parking near the intersection. Finally, a pedestrian refuge island was desired on the north leg of Van Brunt Boulevard.

#### Denver Avenue:

Installation of a short median with a crosswalk, curb extensions on all approaches to the intersection, and streetscaping is desired.

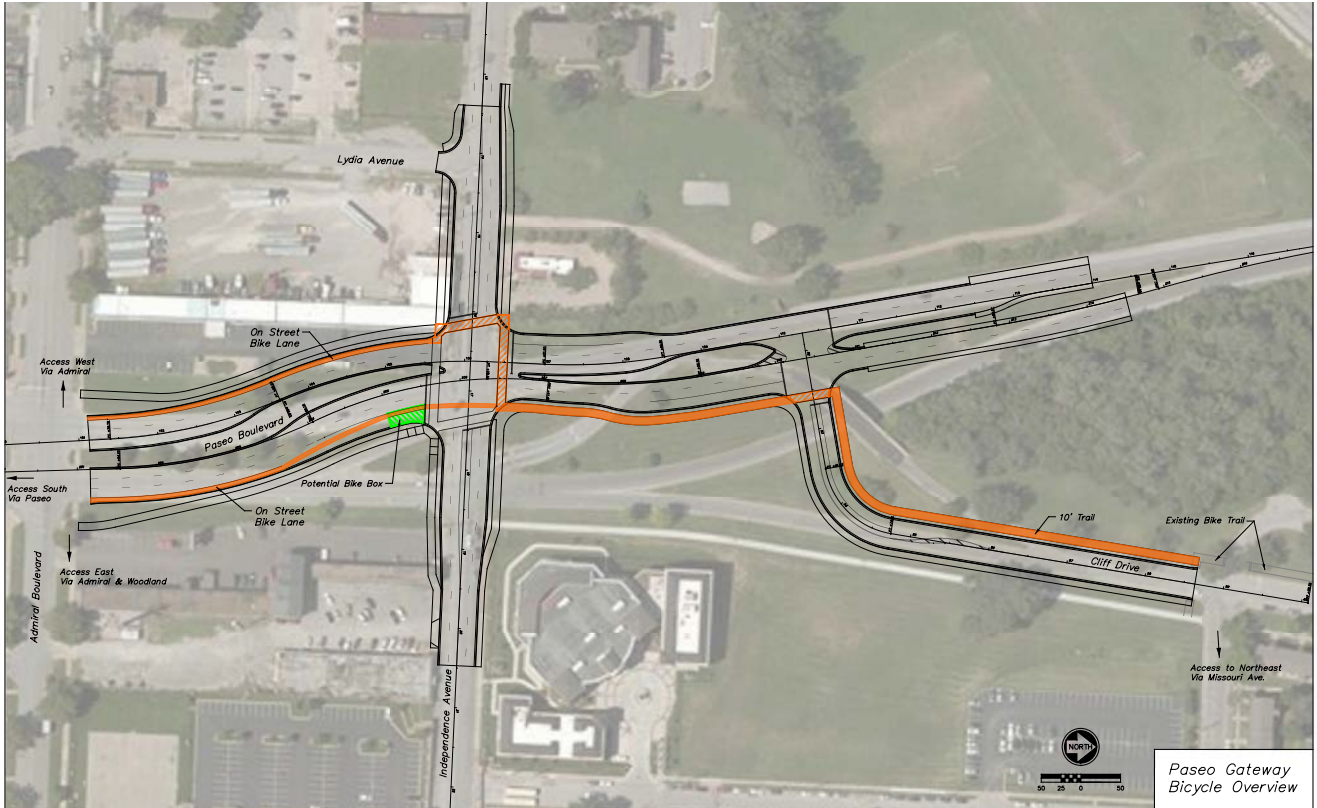
#### Hardesty Avenue:

The addition of an exclusive left turn lane meets the need for capacity improvements identified by the crash analysis and capacity analysis. Planning process participants desired a refuge island installed on the south leg of Hardesty Avenue. They also requested increased streetscaping along the southeast edge of the intersection. Because of a prior realignment by the city, existing right-of-way will accommodate the desired changes.

#### Wilson/Topping Avenue:

Currently, the north side of Independence Avenue has stairs in place of a continuous sidewalk near the railroad bridge. This is not compliant with the Americans with Disabilities Act (ADA). Preliminary investigations suggest that the stairs could be removed, and ADA accessible sidewalk could be constructed. Further, constructing a sidewalk along the south side of Wilson Avenue would provide continuity for the neighborhood north of Independence Avenue.

The intersection of Topping Avenue and Wilson Avenue is a Y-intersection that provides a perception of free movement for drivers on Topping Avenue. Improvements may involve curving Topping Avenue to the east and constructing a standard T-intersection, forcing vehicles to stop prior to entering Wilson Avenue. Curb extensions and crosswalks greatly improve the pedestrian environment.



Paseo Gateway Bicycle Overview

Intersection Improvements at Paseo Blvd

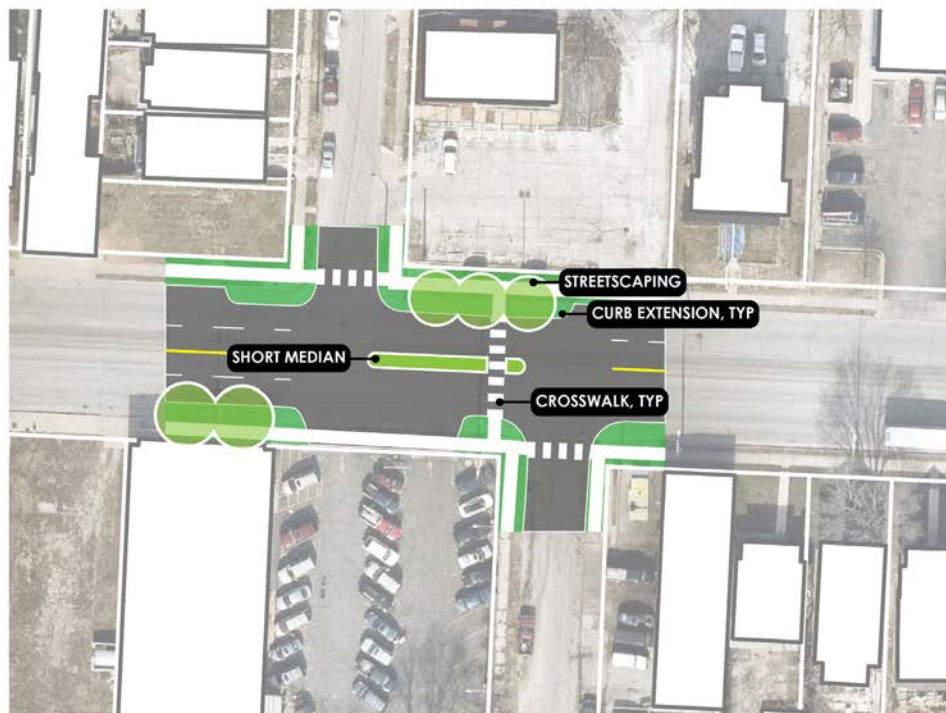


Intersection Improvements at Prospect Ave.



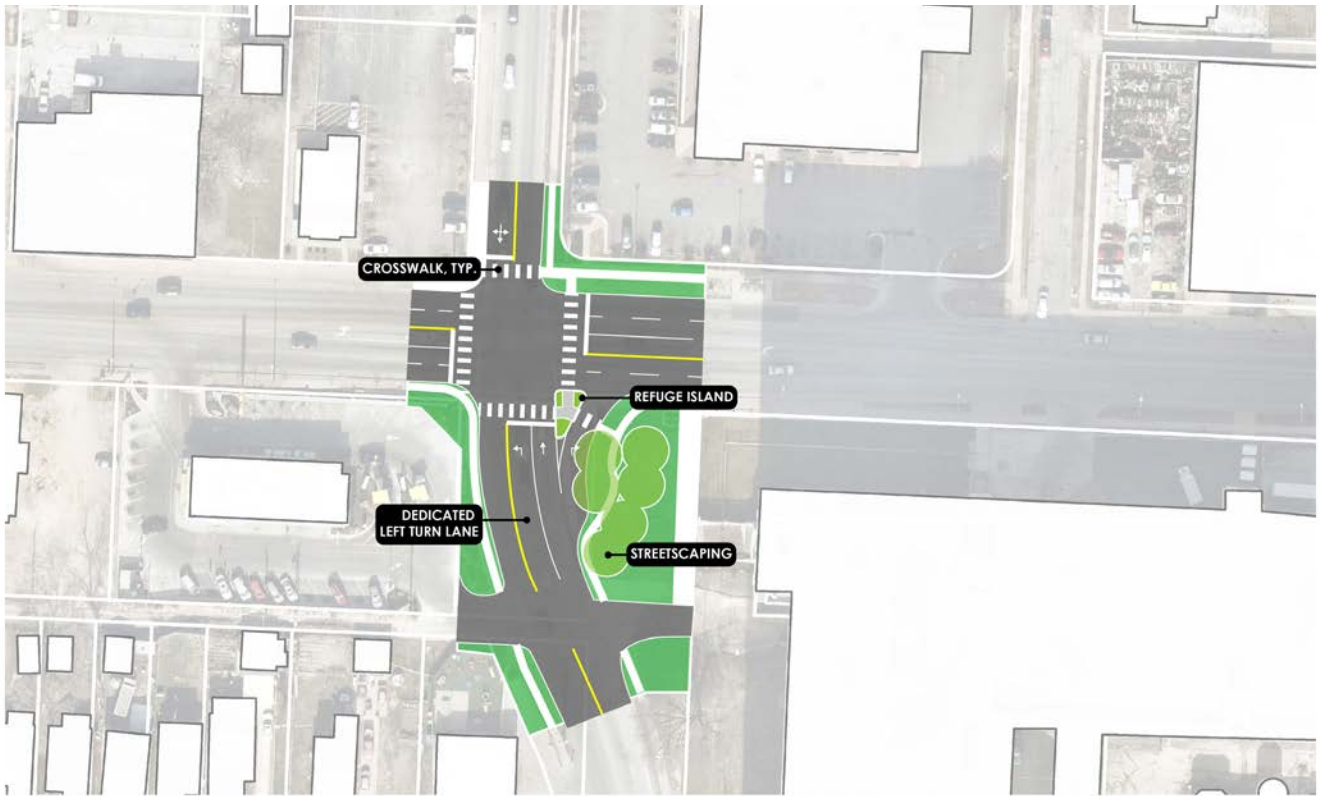


Intersection Improvements at Van Brunt Blvd.

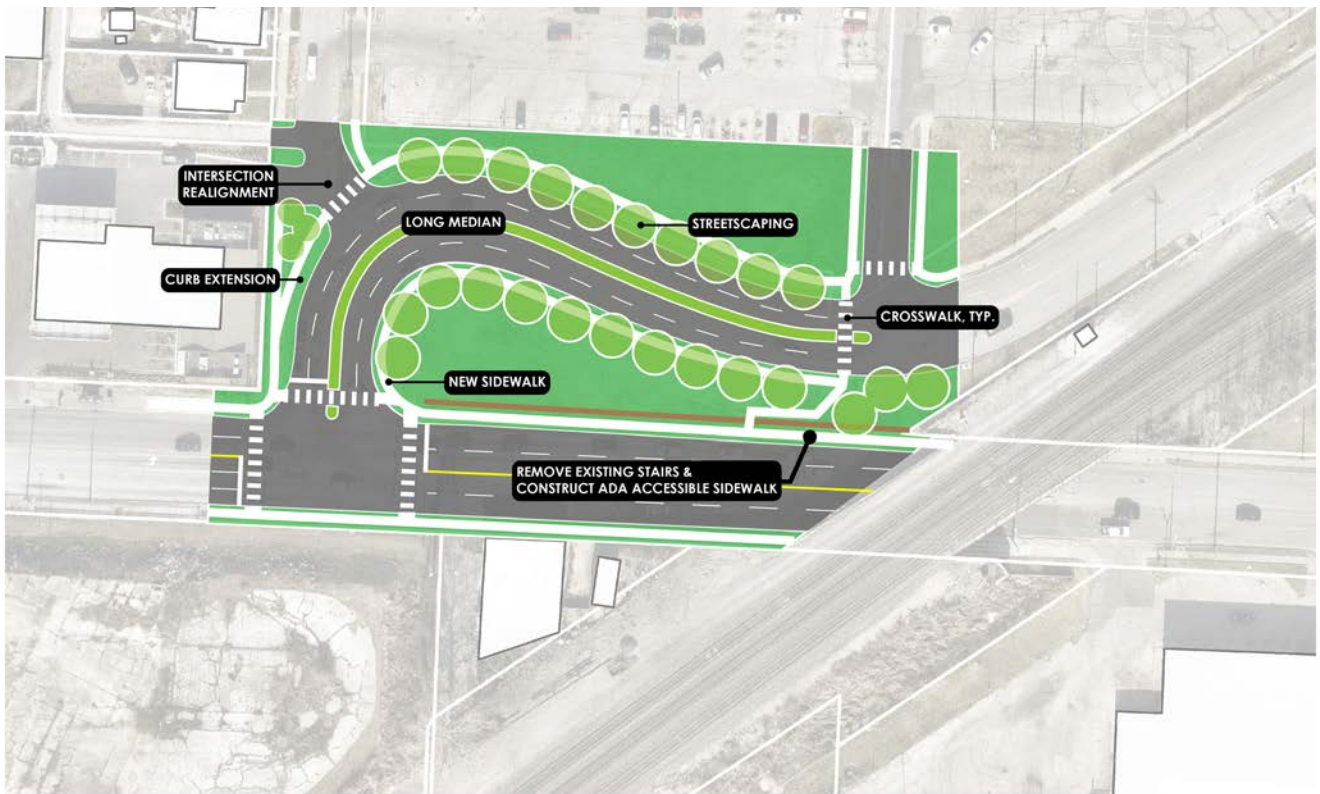


Midblock Crossing at Denver Ave.



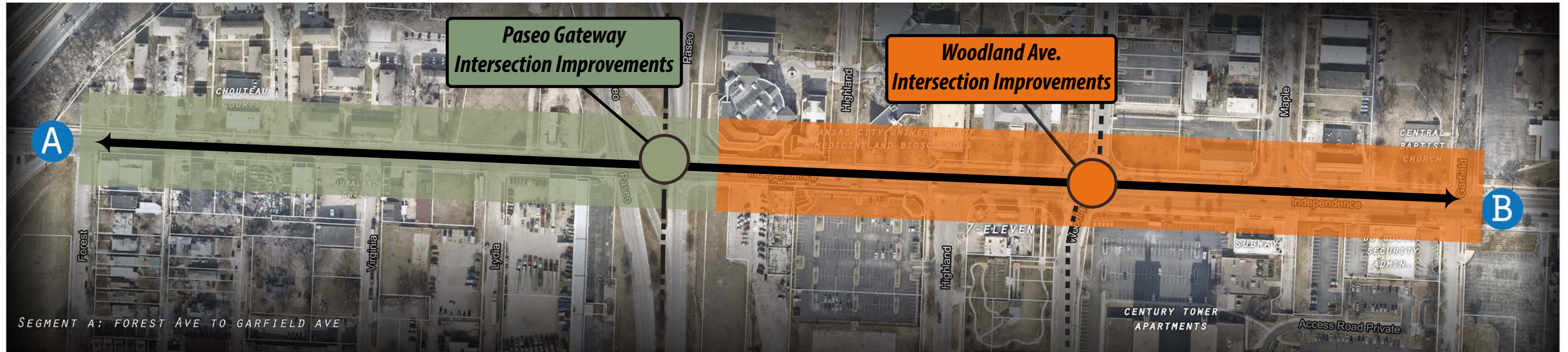


Intersection Improvements at Hardesty Ave.

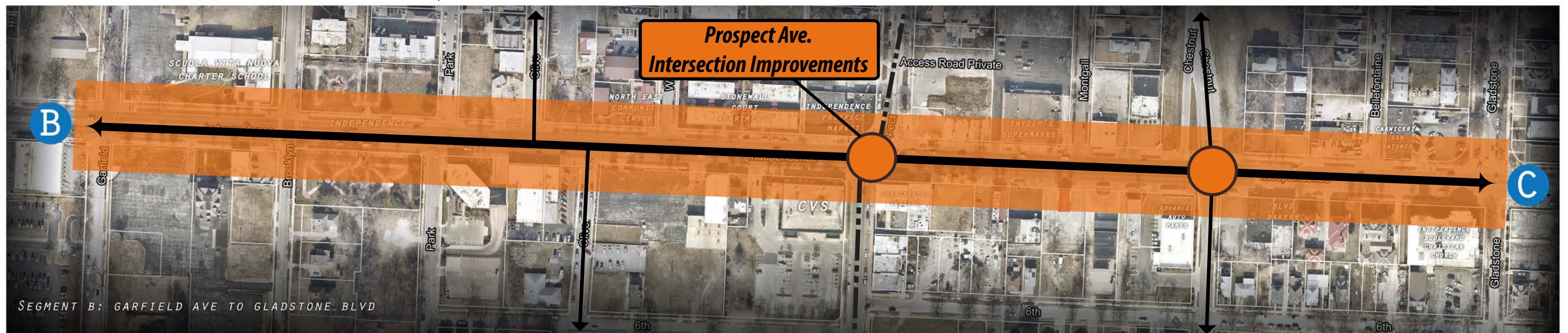


Intersection Improvements at Topping / Wilson Ave.

# Improvements by Intersection



- Urban Character Area
- General Urban Character Area
- Independence Ave. Corridor
- Primary Pedestrian Route/Intersection
- Secondary Pedestrian Route/Intersection





# Improvements by Intersection (continued)



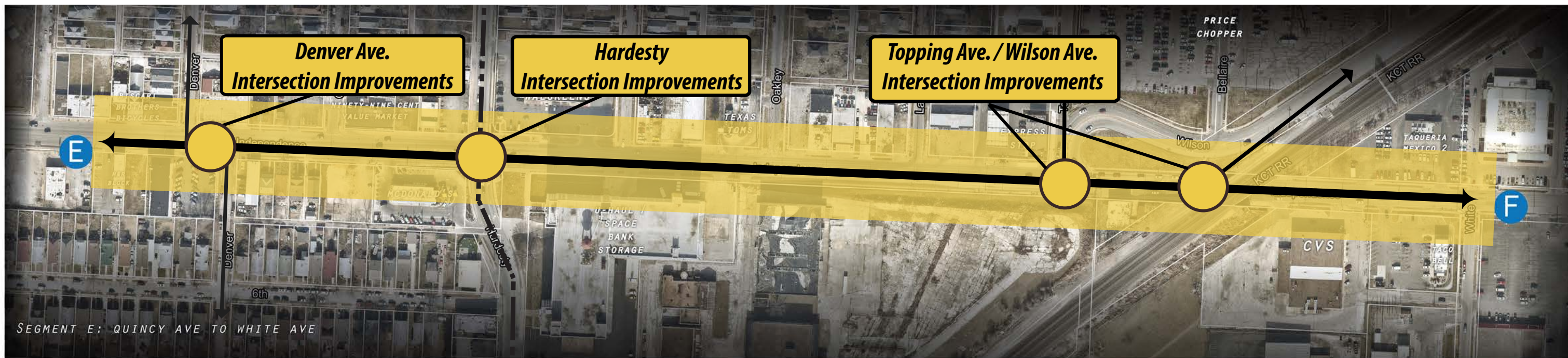
SEGMENT C: GLADSTONE BLVD TO NORTON AVE

- General Urban Character Area
- Suburban Character Area
- Independence Ave. Corridor
- Primary Pedestrian Route/Intersection
- Secondary Pedestrian Route/Intersection

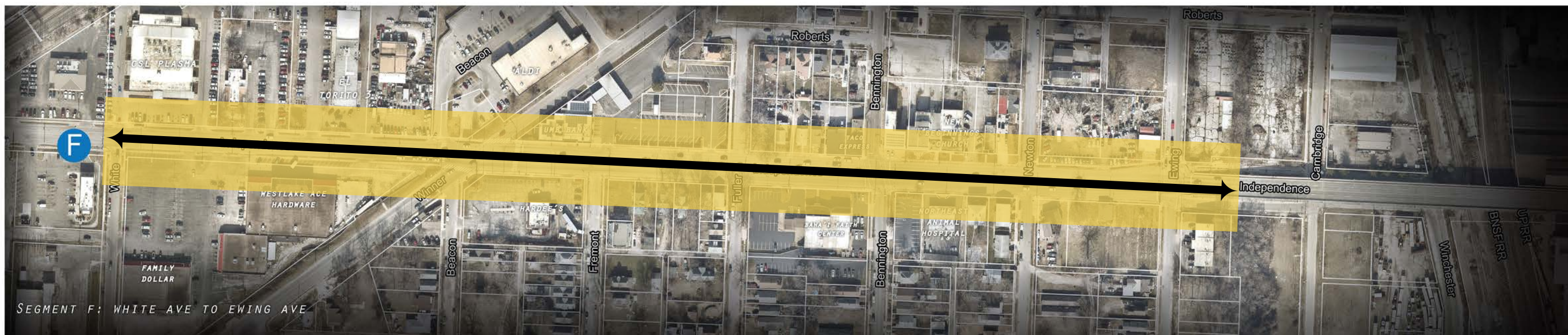


SEGMENT D: NORTON AVE TO QUINCY AVE

# Improvements by Intersection (continued)



-  Suburban Character Area
-  Independence Ave. Corridor
-  Primary Pedestrian Route/Intersection
-  Secondary Pedestrian Route/Intersection



# Capacity Analysis

The study team analyzed the capacity of the corridor to manage all modes of traffic as a three-lane road, with a realigned Van Brunt Boulevard, and more.

## Three-lane Option:

The Steering Committee asked the study team to explore the possibility of road dieting Independence Avenue. Using existing traffic volumes, summarized in **Exhibit 3 (see appendix)**, and signal timing data from the city, the study team examined a three-lane option on Independence Avenue at the four intersections of Tracy Avenue, Chestnut Parkway, Van Brunt Boulevard, and Hardesty Avenue. The team did not change the side-street lane configuration while examining this option. In addition to the four primary intersections, the team also evaluated the Paseo Boulevard intersection with improvements shown in **Exhibit 6 (see appendix)**.

Results from the Synchro+Simtraffic analysis appear in **Exhibit 11 (see appendix)**. Detailed outputs from the analysis are included in the appendix. Results of the analysis indicate that the Chestnut Avenue, Van Brunt Boulevard and Hardesty Avenue intersections are projected to operate at a LOS F during the afternoon peak hour. The intersections of Tracy Avenue and Paseo Gateway both operate at LOS C or better. The City considers LOS D an acceptable operational level during a peak hour.

## Van Brunt Realignment Option:

One of the options discussed with, and preferred by, the Steering Committee was to realign Van Brunt Boulevard intersection and add a northbound right-turn lane at Hardesty Avenue. The study team analyzed the realignment with both a four-lane and three-lane option on Independence Avenue. Results of this analysis are shown in **Exhibit 12 (see appendix)**, while detailed outputs are included in the appendix.

The team observed that both the intersections operate under the LOS D threshold preferred by the city when Independence Avenue has four lanes. Even with the realignment of Van Brunt Boulevard and Hardesty Avenue, the three-lane section operates above LOS D.

## Preferred Intersection Geometry:

As previously described, the study team evaluated Independence Avenue as three sub-sections:

- » **Segment A to B (Forest Avenue to Gardner Avenue):** Includes two through lanes in each direction, a central left turn lane, and separated bicycle lane for both directions. Paseo Gateway improvements are reflected in this planning document.
- » **General urban section (from Paseo Boulevard to Benton Boulevard):** Includes two through lanes in each direction. At un-signalized, offset

intersections, the central turn lane would be converted to a raised median. The incorporated crosswalk would provide refuge for pedestrians.

- » **Suburban section (from Benton Boulevard to Ewing Avenue):** Includes two through lanes in each direction. Left-turn lanes would be added at major intersections to accommodate the high demand of turning traffic. At un-signalized intersections, pavement width would be used to accommodate a median with a crosswalk to provide refuge for the pedestrian crossing Independence Avenue.

In addition to the sub-sections, Steering Committee members desired to plan for the following:

- » **Van Brunt Boulevard**
  - Realigning the south leg of Van Brunt Boulevard to line up to the north leg.
  - Adding left-turn lanes on Independence Avenue for the east and west movements.
- » **Hardesty Avenue**
  - Using the existing right-of-way to add a northbound right turn lane.
  - Separating the northbound left-through lane to exclusive left and exclusive through lanes.

**Exhibit 13 (see appendix)** summarizes the capacity analysis results for each of these scenarios. *Note: The results shown in Exhibits 11 and 12 (see appendix) are rearranged for convenience.*

**Exhibit 13 (see appendix)** illustrates that all proposed intersections operate better than the City threshold of LOS D. Southbound left turn movement at Hardesty Avenue is the only movement projected to operate below LOS D. One way to alleviate the poor LOS is to add a southbound left-turn lane. However, the scope of this planning project is to develop improvements that make pedestrian safety better within the available right-of-way. Adding a proposed southbound left-turn lane at Hardesty Avenue requires additional right-of-way and is beyond the scope of the project, and therefore, not evaluated.

## Horizon Year Capacity Analysis:

The study team tested the preferred lane geometry for a 20-year horizon by increasing traffic volumes at a growth rate of 0.5% per year for 20 years. The team selected the 0.5% growth rate because the northeast corridor is built-out. This results in a factor of 1.1.

The results of capacity analysis for the horizon year are summarized in Exhibit 14 while detailed outputs from Synchro are included in the appendix. Exhibit 14 shows that all movements except for the Hardesty Avenue southbound left- turn movement are projected to operate below the city threshold of LOS D during the peak hours.