

STREET SMART

NEIGHBORHOOD CONNECTIVITY PLAN

MID CITY, BATON ROUGE, LA



Traffic Calming



Bicycle Facilities



Pedestrian Facilities



Neighborhood Connectivity



Stormwater Management



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We advocate for a more livable Louisiana through visionary planning.

MISSION:

The Center for Planning Excellence (CPEX) helps create highly functional, equitable communities throughout Louisiana that capitalize on their unique qualities through community-driven planning and implementation.

FIRM DESCRIPTION:

CPEX is a non-profit organization that coordinates urban, rural and regional planning and implementation efforts in Louisiana. We provide best-practices planning models, innovative policy ideas, and technical assistance to individual communities that wish to create and enact master plans dealing with transportation and infrastructure needs, environmental issues, and quality design for the built environment. CPEX brings community members and leaders together and provides guidance as they work towards a shared vision for future growth and development.

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PREFACE

This plan, “Street Smart: Connecting our Communities,” is directed to decision makers and officials in City of Baton Rouge-Parish of East Baton Rouge government, including Office of the Mayor-President, Metropolitan Council, Department of Public Works, and Planning Commission. The plan was created with the input of citizens and homeowners in Bernard Terrace, Capital Heights, Webb Park, and Valley Park neighborhoods, and it is intended to lay out future improvements to the street network within these neighborhoods.

Although the city-parish has made significant investments and achievements in the area, especially with the creation of the FUTUREBR Comprehensive Plan, the neighborhoods in Baton Rouge’s Mid-City still have need for infrastructure improvements to make their streets bicycle- and pedestrian-friendly, less congested, and safer for all. This plan recommends improvements to achieve those goals, based on the community’s vision.

Street Smart recognizes that city-parish governmental agencies and elected leaders play an important role in accomplishing the action items outlined in this plan, and requests their support to make the citizens’ vision a reality.



Vision

THE STREET SMART VISION

Baton Rouge’s Mid City neighborhoods have streets that are geared toward walkers and bikers as well as drivers. People of all ages and abilities can get to destinations inside and outside their neighborhood safely and efficiently, using a variety of transportation modes. Street infrastructure helps to promote health, increase sense of community, bolster real estate values, and reduce the amount of flooding from stormwater.

STAKEHOLDERS AND PARTNERS

Center for Planning Excellence (CPEX) was approached by residents in the Mid City area to help address challenges they saw in safely getting around their neighborhood. While they were close to a variety of daily necessities and amenities, it was not always possible to reach these safely by bike or on foot. The residents also realized that improving street design can make positive changes in their property values, health, safety, and sense of community. CPEX worked with residents, homeowner associations, and public agencies as well as many other local partners who saw the value of this work. Major contributors were Greater Baton Rouge Association of REALTORS® (GBRAR), who supported the demonstration projects, and the local Department of Public Works (DPW), whose leadership and resources made the plan possible. A full list of project partners can be found on page 3 of this document.



SUPPORT COMMITTEE

Approximately 18 community leaders representing all areas of the neighborhood were appointed to serve on the Street Smart Support Committee. As people who are closely associated with a larger network of area residents, stakeholder groups, and decision makers, they served as a sounding board for CPEX and a link to the groups they represented. The support committee met monthly during fall and winter 2014 to review information, help with publicizing the demonstrations, and provide feedback on plan recommendations.

GOALS

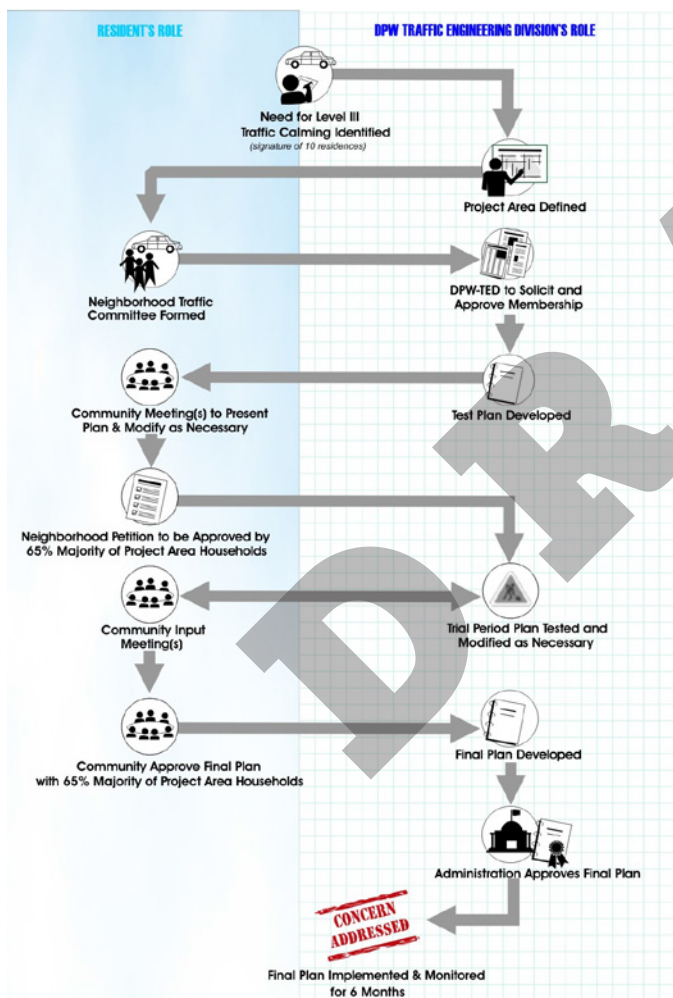
The partners identified the following goals to achieve the vision of the Street Smart project:

- **Promote cost-effective infrastructure improvements.**
- **Calm traffic (defined as “the management of traffic so that its negative impacts on residents, pedestrians and schools are minimized”).**
- **Create a bike network that connects places inside and outside the neighborhood.**
- **Use landscaping to reduce stormwater flooding while beautifying the area.**
- **Address issues at a neighborhood, instead of individual level.**
- **Empower residents to find solutions in partnerships with public agencies.**

Methodology

DPW IMPLEMENTATION METHOD

DPW created a publically available Residential Traffic Calming Manual to provide the community with an understanding of the city-parish's traffic calming initiative. Three levels of traffic calming are described with detailed requirements and example drawings. The entire process of traffic calming, from residents identifying a need, to necessary approvals, is explained in implementation flowcharts in the manual. Since DPW is such an important partner in the Street Smart project, and so many of the traffic calming recommendations came from the manual, it made sense to adopt the manual's process as well.



The Level III Implementation Process from the Residential Traffic Calming Manual is available online at <https://brgov.com/dept/dpw/traffic/pdf/07ResidentialTraffic.pdf>

STREET SMART ZONES

One of the first decisions of the Street Smart project was to define the project area. The project area covers approximately 1.5 square miles and contains about 29 subdivisions, including the major subdivisions Bernard Terrace, Capital Heights, Steele Place, Glenmore Place, Walnut Hills, Valley Park, Wells Place, Westdale Heights, and Westdale Terrace. Six "zones" were identified to ensure all parts of the project area were fairly represented. The zones were based on residents' concerns, natural boundaries, subdivisions, and similar neighborhood characteristics, and were mainly used at the beginning of the project.



This zone map was used early on in the process to understand the needs of the various, related areas, and make sure all areas were equally represented.

PUBLIC MEETING

On July 22, 2014, a public meeting was held at Ingleside United Methodist Church to introduce the Street Smart project and hear residents' ideas. At least 150 people attended, representing all six Street Smart zones. After a presentation about the area's existing conditions, attendees separated into small facilitated groups by zone. Each group discussed their concerns and desires, recorded them on maps, and shared them with the larger group. Attendees also gave their input through a visual preference survey and an area-wide connectivity map.



Visual preference survey from the Street Smart public meeting. Each attendee received colored dots to indicate their likes and dislikes for neighborhood signage possibilities. Green = like and red = dislike.



Meeting attendees assessed the conditions of the Capital Heights area, while also providing input and ideas for improvements to the area. This was done for all of the six zones.

STREET AND TRAFFIC DATA

DPW provided quantitative traffic data for the area that was already on file--no new data was created by DPW for the Street Smart project. DPW provided data for most of the major roads in the district including peak traffic times, average speed, 85th percentile speed, and number of speeders going more than five miles per hour over the posted limit. (Note: 85th percentile speed is a value commonly used in traffic engineering; the concept assumes that most drivers behave in a safe and reasonable manner, do not drive at excessive speeds and do not want to get into crashes. Therefore, the speed under which 85% of drivers drive is considered the maximum safe speed for a location.)

Citation: <http://www.lsp.org/pdf/troopc85thSpeed.pdf>

CPEX gathered the following data for all streets in the district using a windshield survey: posted speed limit, existing bike and pedestrian facilities like sidewalks and bike lanes, and any traffic or connectivity issues, such as cars not stopping at stop signs or people walking in the roadway with cars. CPEX created a spreadsheet of the quantitative data and used it to identify possible "problem areas", which were discussed at the public meeting. Participants at the public meeting and visitors to the online forum were asked about their own experiences with traffic in their neighborhoods. This qualitative data helped verify and add to the project team's understanding of traffic in the district.

WALKING AUDIT

Walking audits are detailed evaluations of a street from a pedestrian perspective. In fall 2014, walking audits were performed on streets across the area by the project team, Support Committee members, and students and faculty from LSU's Robert Reich School of Landscape Architecture. Using a standard form, participants noted what worked and what did not about the street sections they walked, in categories including intersections, sidewalks, driver behavior, safety, comfort and appeal, and overall observations. Time of day, sketches of problem areas, and pictures were recorded. The information gathered during the walking audits was used to inform the rest of the Street Smart plan, and the walking audit itself was an effective way for participants to see the transportation needs in their neighborhoods firsthand.

Methodology

WEBSITE/ONLINE PRESENCE

CPEX created and managed a web-based public input platform for public input, feedback and announcements to enhance public participation and communication throughout the planning process. Mindmixer, the web-based tool that was used, was intended to allow for more robust feedback and polling. In collecting data, it allowed us to better understand the public's response to the demonstrations, their priorities, and the overall effectiveness of the various demonstrations.

DEMONSTRATIONS

Over several months, with input and feedback from the public, REALTORS®, the support committee, and stakeholders including the local Department of Public Works, CPEX designed and planned the installation of eleven demonstrations that temporarily changed the neighborhood streets to make them more bicycle- and pedestrian-friendly while still allowing vehicles to travel efficiently.

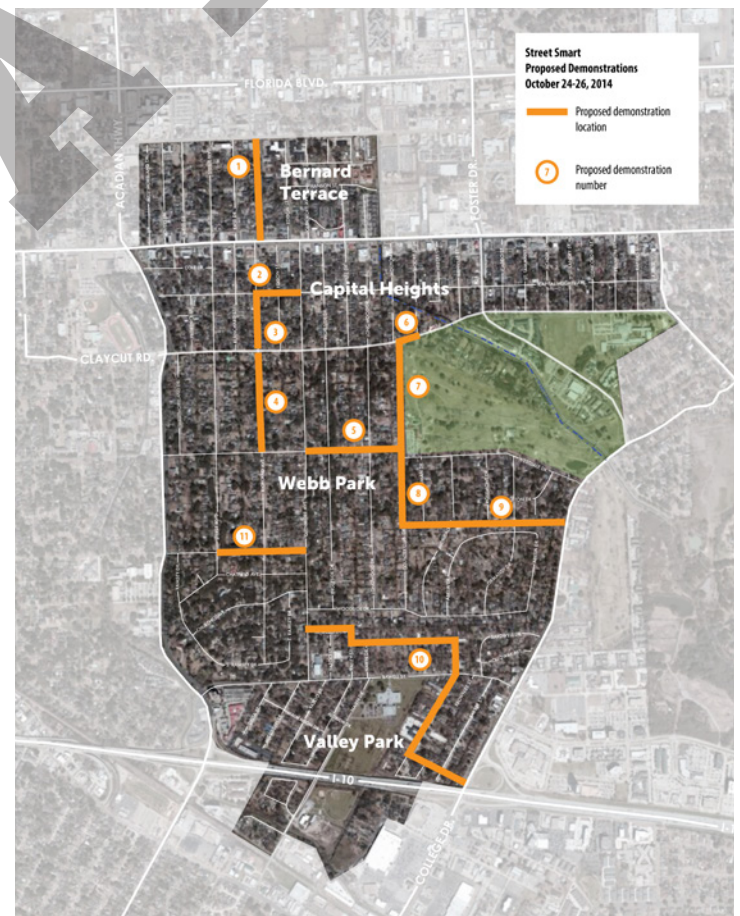
These temporary demonstrations were in place over the weekend of October 24-26, 2014 and showcased a variety of ways to create safer streets, including narrowing travel lanes, adding plantings to improve aesthetics and stormwater drainage, and adding bike lanes, crosswalks, signs, and sidewalks. This was achieved through the creative use of temporary signage, washable paint, potted plants, and the assistance of DPW, REALTORS®, and other volunteers.



Volunteers were on hand throughout the weekend to help installing and staffing the demonstrations.



The Street Smart website (cpep.org/street-smart) has been used throughout this project as a communication and feedback tool.



Maps and other informational signs were placed at each of the demonstration sites.

ACTIVITIES

To draw visitors to the demonstrations, several activities were held throughout the weekend. The activities were designed to engage the many different groups who use area streets, including area residents, walkers, runners, bike riders, and Webb Park playground users. All activities were promoted on the Street Smart website, social media, and with press releases, by CPEX and partner organizations, including REALTORS®.

A “wine walk,” planned by the Webb Park Civic Association, was held Friday night, and served as a kickoff for the Street Smart demonstrations. Neighbors and friends of Webb Park Civic Association were invited to bring their wine glasses and visit a series of homes for wine, food, and mingling, and ticket proceeds went towards the association’s signage and landscaping initiative. The wine walk was held on Richland Ave., and centered on one of the Street Smart demonstrations, the traffic choker between Claycut Rd. and Broussard St. A Street Smart information table was also set up at the beginning of the wine walk where CPEX staffers and REALTOR® volunteers talked to attendees about the project, and invited them to visit the rest of the demonstrations and activities.



CPEX and REALTORS at Wine Walk

MINDMIXER FEEDBACK

People were invited to submit information about the street smart zones via streetsmart.mindmixer.com, an online engagement platform. Topics included congestion hot spots, what makes you feel safe or unsafe when you are walking, which zone do you live in, share pictures of places you like to walk or run or places that need improvement, and tell us which streets are best for walking and running in the neighborhood and why. These results helped inform the development of the Street Smart plan.



Bike Train



Bike lanes on Capital Heights Ave. were painted to increase visibility and safety.



A partial street closure limited cut-through traffic on Claycut Rd.



A “sidewalk” was installed to improve pedestrian connectivity between Capital Heights and Webb Park.



A traffic choker was installed on Richland Ave. to slow down speeding vehicles.

Existing Conditions

ANALYSIS AND CONTEXT



Observed drainage issues



Streets with speeding issues
(data collected from DPW)



Fragmented existing bike and pedestrian network

**DRAINAGE
ISSUES**

+ SPEEDING +

**DISCONNECTED
NETWORK**

Initial studies of the Street Smart zone revealed a number of issues relating to the streets and their function. The drainage of stormwater is a concern in this area, just as it is throughout much of Baton Rouge. The storm water infrastructure often cannot handle the load placed on it by a heavy rain event. In addition to drainage issues, traffic data has revealed that speeding is consistently a problem on several streets, with anecdotal evidence of speeding in other areas as well.

Perhaps the most pressing issue is the disconnected network of bike and pedestrian facilities in the area. The existing system is comprised of fragments of sidewalks, bike lanes, and a multi-use trail - few of which are connected to one another, or to bike and pedestrian facilities outside the Street Smart zone. These existing assets make a solid foundation on which to build a connected network.



Area context, relationship to points of interest

+ **AREA CONTEXT** **=** **INFORMED SOLUTIONS**

The Street Smart zone is situated in the heart of Baton Rouge, just a short walk, bike ride, or drive from many of the city's parks, schools, attractions, commercial and civic areas, and other amenities. The masterplan and recommendations that follow were developed with these issues and this context in mind.

Master Plan

BIKE, PEDESTRIAN, AND TRAFFIC CALMING NETWORKS

HOW DID WE GET HERE?

The following recommendations have been made based on a number of factors, including traffic data, existing street conditions, area context, proximity to other facilities, and input from stakeholders, residents, city officials, and other experts. Additional input was gathered during the demonstration weekend where a number of bike, pedestrian, and traffic calming elements were tested. The resulting masterplan is an effort to create a connected and coordinated set of bike, pedestrian, and traffic calming features for these Mid City neighborhoods.



Screen shot of the cplex.org/street-smart, where input was gathered

WHAT ARE WE RECOMMENDING?

The Street Smart plan consists of recommendations that address a few key issues: bike and pedestrian access, traffic calming, and overall connectivity to the surrounding community. Wherever possible, storm water management features have been integrated into the recommendations. In addition to the recommendations, an implementation matrix is provided to assist community leaders as they move forward toward implementing these recommendations.



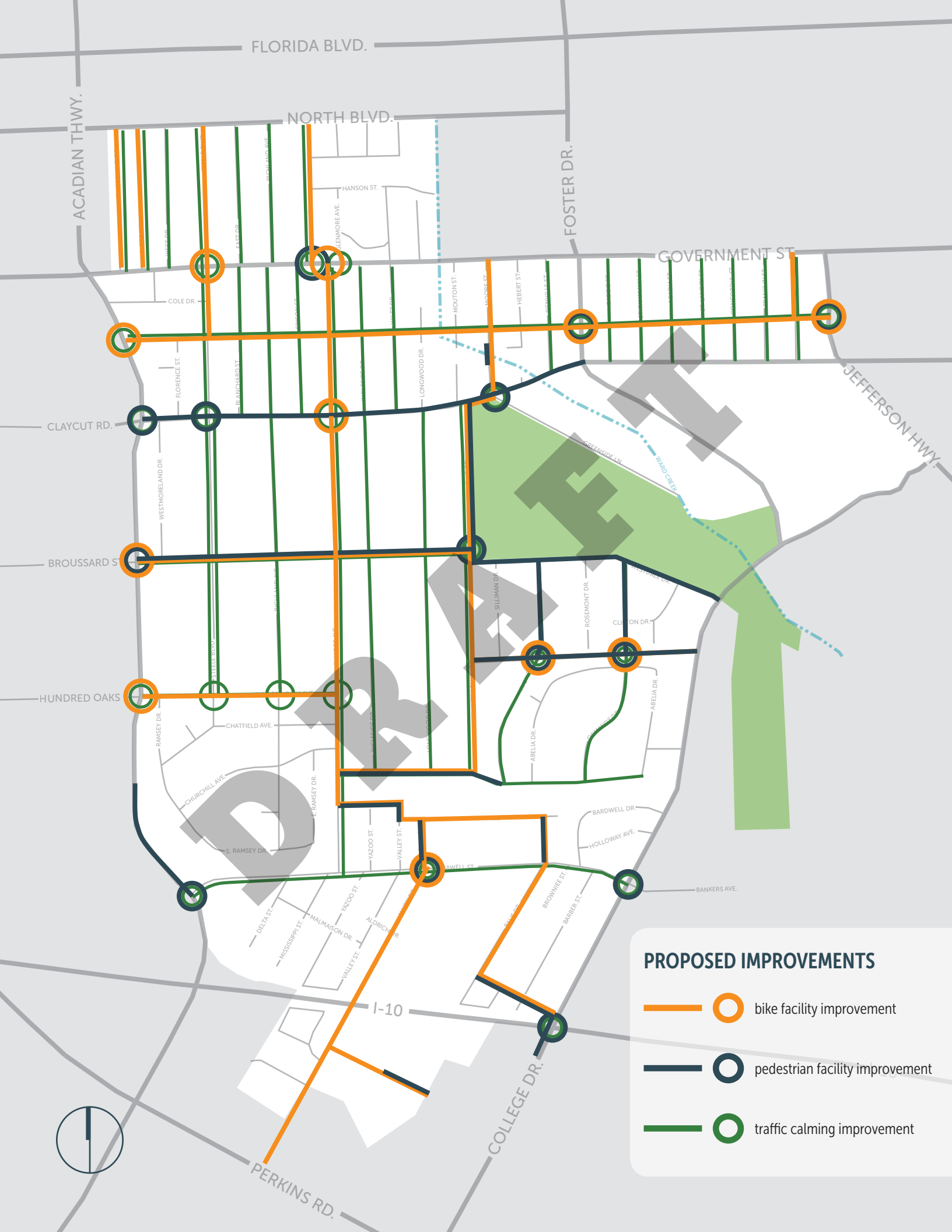
One of the temporary installations that was tested during the demo weekend

HOW ARE THE RECOMMENDATIONS ORGANIZED?

The recommendations are separated into two sections: bike and pedestrian, and traffic calming. Each set of recommendations is preceded by an overall masterplan and an outline of the recommendations. Each recommendation spread is keyed to the masterplan and contains locations, general information, reasoning, and design guidelines for that specific recommendation.



An example of the design recommendations



FLORIDA BLVD.

NORTH BLVD.

ACADIAN THWY.

FOSTER DR.

GOVERNMENT ST.

JEFFERSON HWY.

CLAYCUT RD.

BROUSSARD ST.

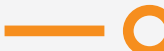
HUNDRED OAKS

I-10

COLLEGE DR.

PERKINS RD.

PROPOSED IMPROVEMENTS

 bike facility improvement

 pedestrian facility improvement

 traffic calming improvement

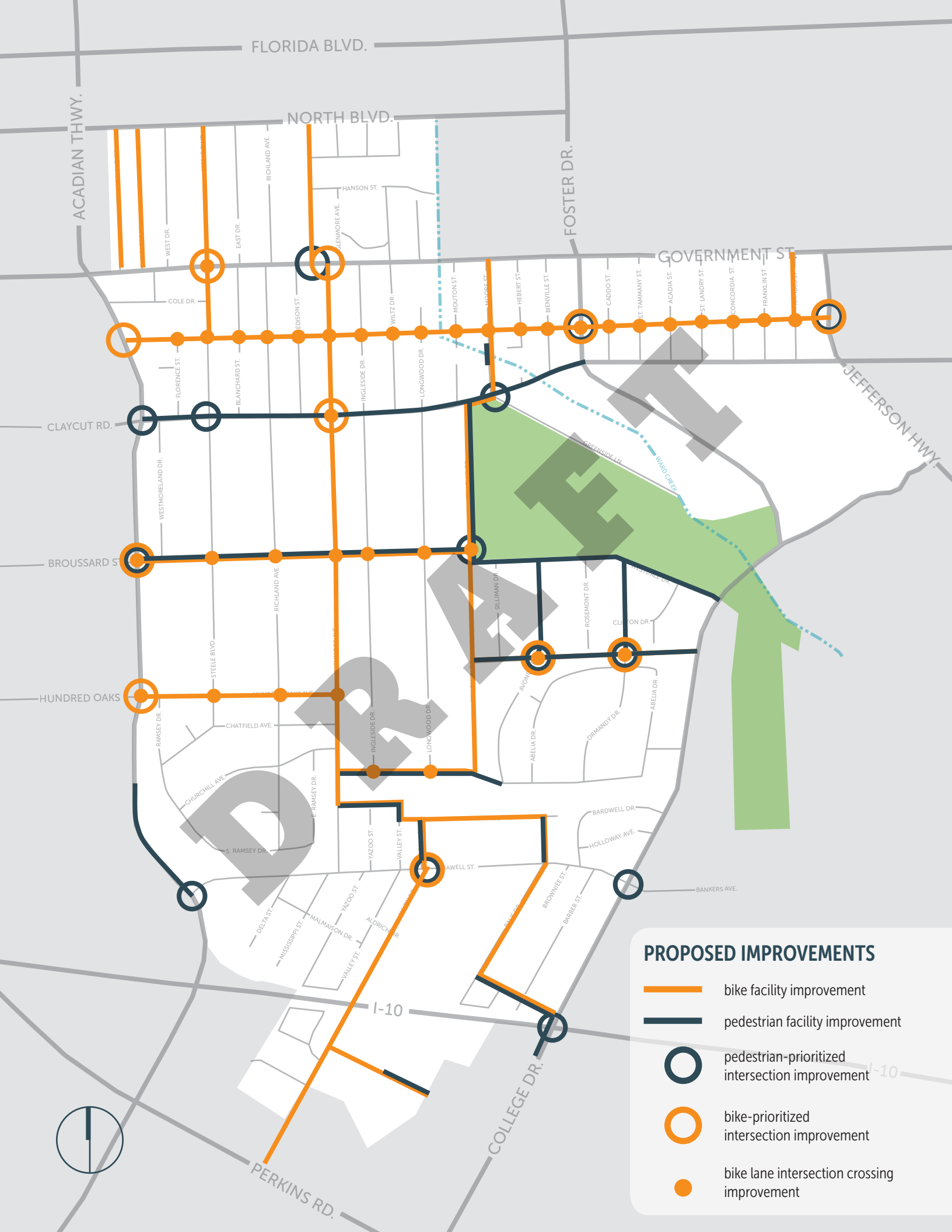
Recommendations

BIKE AND PEDESTRIAN FACILITIES

- 1 | **Signage and road marking standards** (BT, CH, VP, WP)
- 2 | **New buffered bike lanes** (BT, WP)
 - Country Club Dr.
 - Lovers Ln.
 - Steele Blvd.
- 3 | **New dedicated bike lanes** (BT, WP)
 - Broussard St.
 - Woodside Dr.
 - Nairn Dr./Valley St.
 - Westmoreland Dr.
 - Edison St.
- 4 | **Improvements to existing contraflow bike lanes** (CH)
 - Capital Heights Ave.
- 5 | **Conversion of existing bike lanes to buffered bike lanes** (WP)
 - Glenmore Ave.
 - Hundred Oaks Ave.
- 6 | **Improvements to shared lanes** (CH, VP, WP)
 - Country Club Dr.
 - Glenmore Ave.
 - Steele Blvd.
 - Valley Park bike route
 - Nairn Dr./Valley St.
 - Moore St.
 - Rapides St.
- 7 | **Intersection improvements (bike prioritization)** (CH, WP)
 - Glenmore Ave. at Claycut Rd.
- 8 | **Extended medians (bike prioritization)** (CH)
 - Government St. at Steele Blvd.
 - Government St. at Glenmore Ave.
 - Acadian Thwy. at Capital Heights Ave.
- 9 | **Traffic signal synchronization** (CH)
 - Capital Heights Ave. at S. Foster Dr.
 - Capital Heights Ave. at Jefferson Hwy.
- 10 | **Bike lane transitions at intersections** (CH, WP)
 - neighborhood intersections (not signaled)
 - major intersections (signaled)
- 11 | **New sidewalks** (CH, VP, WP)
 - Claycut Rd.
 - Broussard St.
 - Avondale Dr.
 - Ormandy Dr.
 - Webb Park perimeter
 - Woodside Dr. (missing sections)
 - Valley Park neighborhood (missing sections)
 - Acadian Thwy.
- 12 | **Improvements to neighborhood trail and Ward Creek crossing** (CH, WP)
- 13 | **Extended median (pedestrian refuge)** (BT, CH)
 - Government St. at Edison St.
- 14 | **Raised intersection** (WP)
 - Country Club Dr. at Broussard St.
- 15 | **HAWK beacon and crosswalk** (CH)
 - Capital Heights Ave. at S. Foster Dr.
 - Capital Heights Ave. at Jefferson Hwy.
- 16 | **Crosswalks and traffic signals: Additions and improvements** (BT, CH, VP, WP)
 - Claycut Rd. at Moore St. & Steele Blvd.
 - Acadian Thwy. at Bawell St., Broussard St., & Claycut Rd.
 - Nairn Dr. at Bawell St.
 - College Dr. at Bawell St.
 - College Dr. at I-10 ramp
 - Neighborhood Trail at Ormandy Dr. & Avondale Dr.



BT= Bernard Terrace
CH= Capital Heights
VP= Valley Park
WP= Webb Park

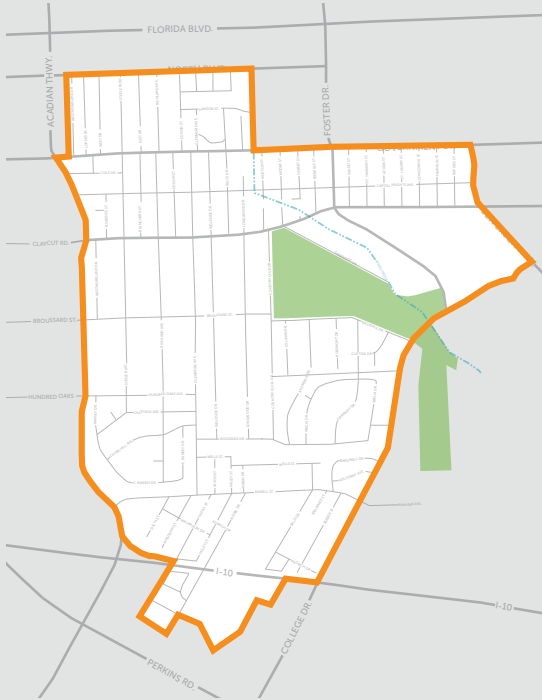


PROPOSED IMPROVEMENTS

- bike facility improvement
- pedestrian facility improvement
- pedestrian-prioritized intersection improvement
- bike-prioritized intersection improvement
- bike lane intersection crossing improvement

1 | Signage and road marking standards

IMPROVEMENT LOCATIONS:



INSTALL CONSISTENT SIGNAGE AND ROAD MARKINGS THROUGHOUT THE STREET SMART ZONE.

OVERVIEW:

Consistency in the usage of directional and advisory signage and road markings is crucial for the safety of all users of our roadways. Clear and uniform road markings eliminate confusion of how a roadway is intended to be used.

Custom signage can be used as a place-making mechanism by defining neighborhoods with unique signs that reflect the history or character of an area.

A number of markings and signs are recommended for multiple areas in the Street Smart zone.

APPROPRIATE APPLICATIONS:

- Anywhere signage and roadway markings are currently used, as well as locations where they are needed.



DPW painted temporary Shared Lane Markings (sharrows) on the streets during the Street Smart demonstration weekend.
source: CPEX



DPW installed "Share the Road" signage as part of the Street Smart demonstrations.
source: CPEX



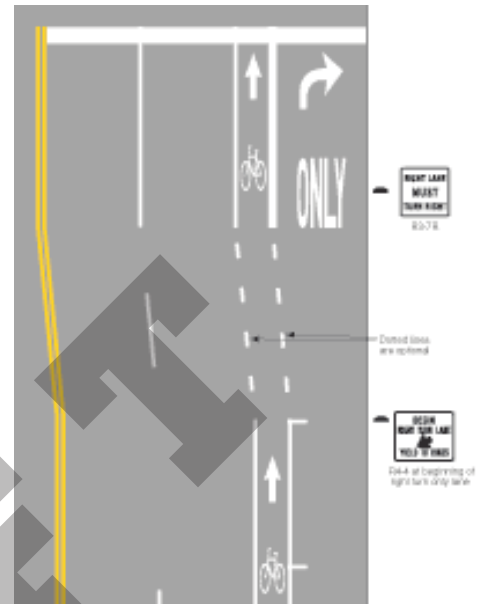
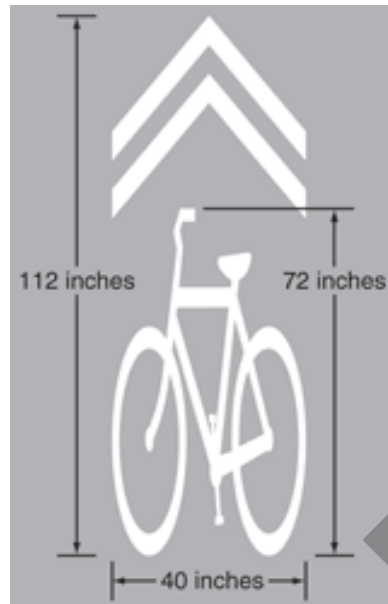
R3-17



R3-17a



R3-17b



R4-4



D1-1b (R)



D1-1b (L)



D1-1c



D4-3



D11-1



M1-8

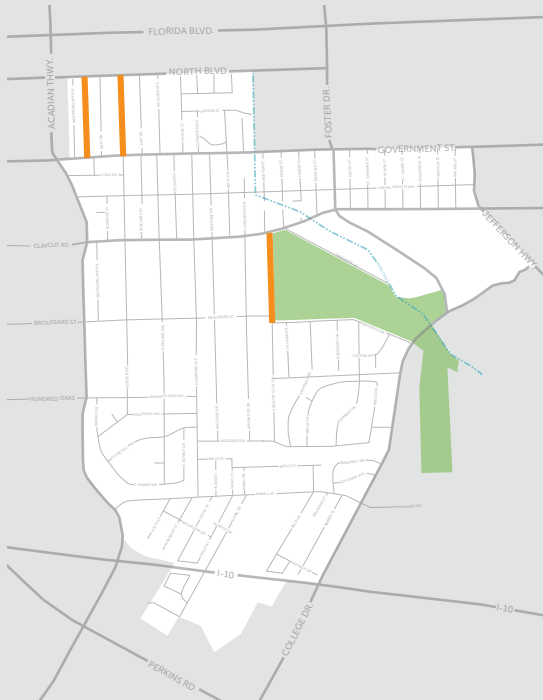
While there is some room for customization of signage, MUTCD sets the standards for most applications.

DESIGN GUIDELINES:

- This document defaults to the standards set forth by the Manual on Uniform Traffic Control Devices, or MUTCD.
- The MUTCD is published by the Federal Highway Administration (FWA) of the Department of Transportation to set the standards by which traffic signs, road markings, and signals are used.
- In addition to the MUTCD, this document refers to:
 - American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities.
 - National Association of City Transportation Official's (NACTO) design guidelines for bike and pedestrian facilities.

2 | New buffered bike lanes

IMPROVEMENT LOCATIONS:



OVERVIEW:

Buffered bike lanes are conventional bike lanes that incorporate a buffer space between the bike lane and travel lanes. They can be an effective and economical way to provide increased safety to bicyclists. They not only provide increased visibility of bike lanes to motorists, but also act as a traffic calming feature by means of narrowing the lane width.

APPROPRIATE APPLICATIONS:

- Anywhere a bike lane is considered
- On streets with lanes wide enough to accommodate the buffer zone
- On streets where a two-way cycle track is proposed
- As an economical alternative to bike lanes that are separated from travel lanes by a curb or any other type of physical barrier

INSTALL NEW BUFFERED BIKE LANES ON:

COUNTRY CLUB DR.

Between Claycut Rd. and Broussard St.

LOVERS LN.

Between Government St. and North Blvd.

STEELE BLVD.*

Between Government St. and North Blvd.

* Steele Blvd. becomes one-way, southbound



Buffered bike lane in Austin, TX, showing chevron buffer markings and dashed right turn transition
Source: NACTO

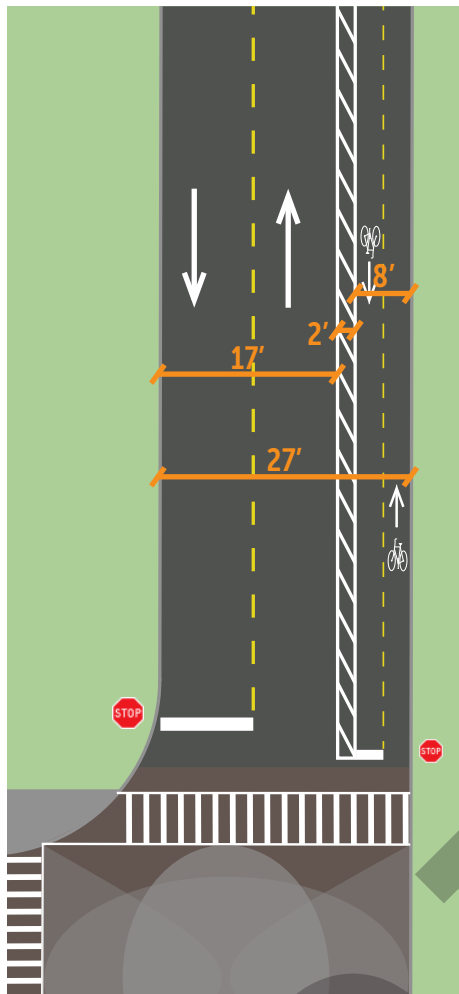


Buffered bike lane in a residential area of Cape Coral, FL. Solid white lines are used when the buffer zone is less than three feet wide.
Source: NACTO

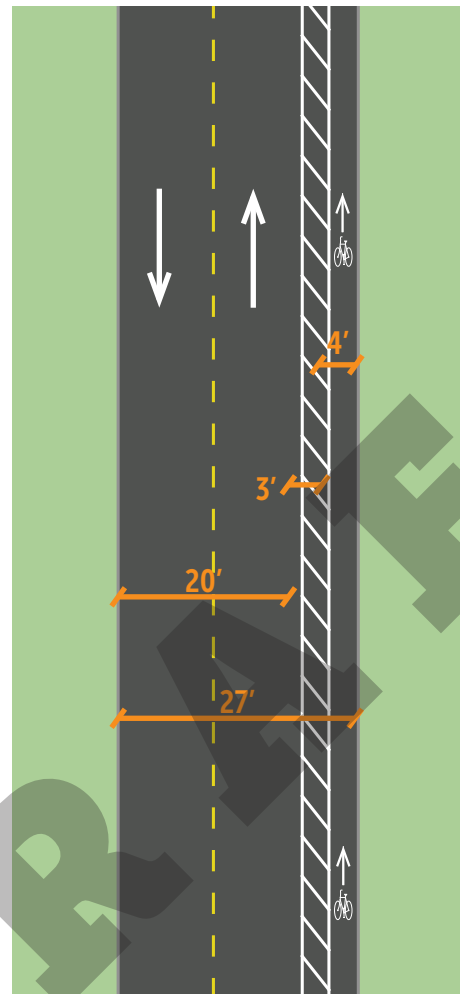


Buffered bike lane in conjunction with a high visibility crosswalk in Billings, MT.
Source: NACTO

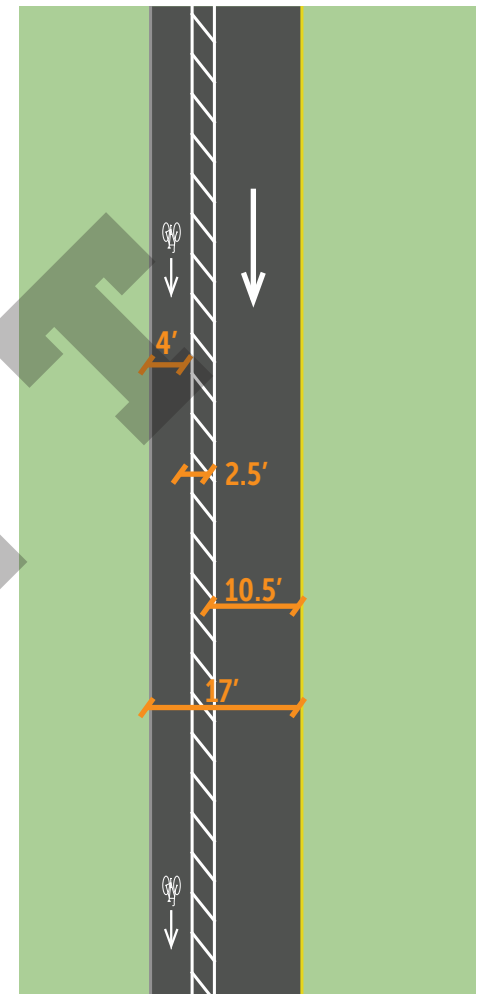
COUNTRY CLUB DR.



LOVERS LN.



STEELE BLVD.



DESIGN GUIDELINES:

- Install buffered lane markings (two solid white lines with interior hatching) as per MUTCD guidelines.
- The buffer should be at least 18 inches wide, but 3 to 4 feet is preferred.
- Install bike lane pavement markings (bike symbol or helmeted bicyclist symbol and arrow) at the beginning of each block or every 300 feet, whichever is less, in both directions.
- Install stop bars and stop signs at intersections when appropriate.
- Maintain, at minimum, a bike lane width of 4 feet for a one-way lane and 8 feet for a two-way lane.
- When approaching right turns, replace solid white lines with dashed lines to indicate a transition area to both vehicles and bicyclists.
- Install proper bike lane signage as per MUTCD guidelines to signify the beginning and end of the lane, as well as intermittently along its length.

3 | New dedicated bike lanes

IMPROVEMENT LOCATIONS:



OVERVIEW:

Dedicated bike lanes provide bicyclists with a space in which to ride that is separated from vehicular travel lanes. Bike lanes are proposed on these streets to serve as key routes that connect to other existing or proposed bike facilities or to existing destinations.

APPROPRIATE APPLICATIONS:

- Anywhere bicyclists are present or desired.
- On streets with the required street width to accommodate dedicated bike and travel lanes.
- On streets with higher speeds or higher traffic volumes.

INSTALL NEW DEDICATED BIKE LANES ON:

BROUSSARD ST. *

Between Country Club Dr. and Acadian Thwy.

EDISON ST. *

Between Government St. and North Blvd.

NAIRN DR./VALLEY ST.**

Bawell St. to Perkins Rd.

WESTMORELAND DR.

Between Government St. and North Blvd.

WOODSIDE DR.

Between Country Club Dr. and Glenmore Ave.

* Installation of bike lanes requires the addition of pavement in the right of way.

** This is a phased, long term solution. For short term solution, see pg. 28.

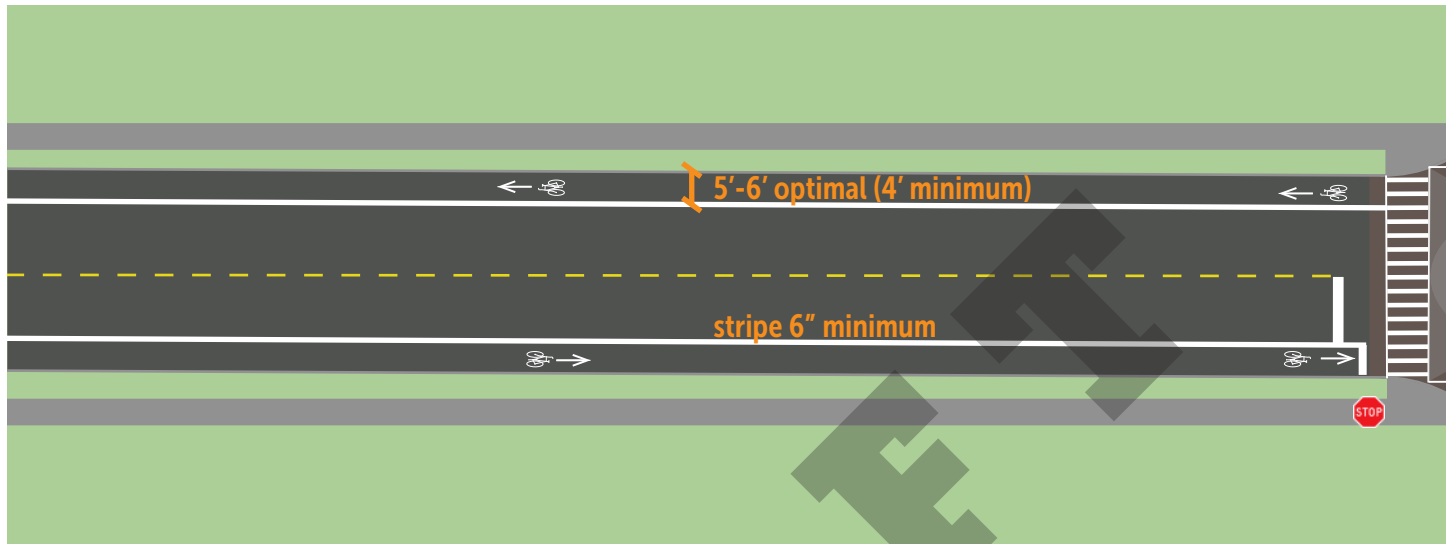


Conventional dedicated bike lane in Baldwin Park, CA, with appropriate roadway markings.
source: NACTO



There are numerous options for marking a bike lane, including symbols, words, and directional arrows
source: NACTO

TYPICAL DESIGN:



BROUSSARD ST.

Phase 1: Install two 4' one-way lanes between Country Club Dr. and Glenmore Ave.

Phase 2: Install additional pavement to accommodate two 5' lanes between Country Club Dr. and Acadian Thwy.

EDISON ST.

The addition of pavement along Edison St. will provide space for dedicated bike lanes, between Government St. and North Blvd.

NAIRN DR./VALLEY ST.

Install additional pavement to accommodate either dedicated bike lanes or a shared use path on one side of the street.

WESTMORELAND DR.

Two 6' one-way lanes between Government St. and North Blvd.

WOODSIDE DR.

Two 5' one-way lanes connecting Country Club Dr. to Glenmore Ave.

DESIGN GUIDELINES:

- Install 5'-6' wide bike lanes.
- Install solid white lane markings (minimum 6" wide) to mark the boundary of the lane.
- Revised markings should include a dotted transition approximately 50 feet before each cross street where right turns are allowed.
- Install bike lane pavement markings (bike symbol or helmeted bicyclist symbol and arrow) at the beginning of each block or every 300 feet, whichever is less, in both directions.
- Replace existing bike lane signage with MUTCD R3-17 "Bike Lane" signs.
- Maintain bike lanes so that they are free of potholes, broken glass, and other debris.

4 | Improvements to existing contraflow bike lanes

IMPROVEMENT LOCATION:



IMPROVE BIKE LANES ON:

CAPITAL HEIGHTS AVE.

Acadian Thwy. to Jefferson Hwy.



Contraflow lanes in Eugene, OR, allow bicyclists to travel in two directions on a one-way vehicular street.
source: NACTO

OVERVIEW:

Contraflow bike lanes are designed to allow bicyclists to travel in the opposite direction of motor vehicle traffic.

On one-way streets like Capital Heights Ave., more space is opened up for the addition of bike lanes that flow with traffic, and in this case a contraflow lane as well. Streets with contraflow bike lanes should be appropriately and consistently marked and signed to ensure that cars and bikes travel safely and without confusion.



A "Do Not Enter" sign paired with "Except Bicycles" clarifies the intended use of the road to bicyclists and motorists.
source: NACTO

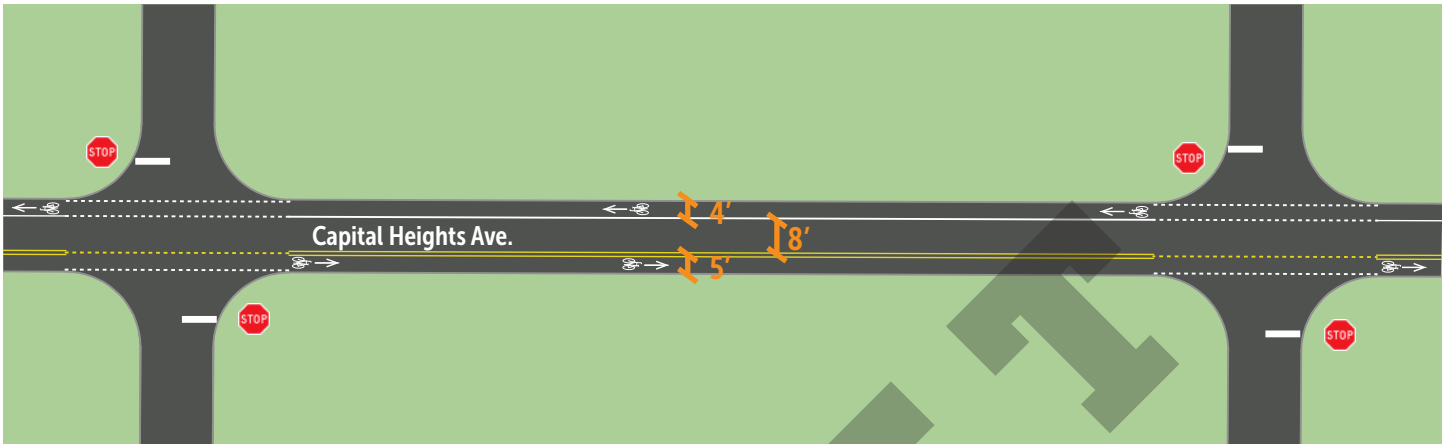
APPROPRIATE APPLICATIONS:

- Streets with two-way bike traffic and one-way vehicular traffic
- Locations where two-way bike traffic is necessary as part of a larger network of bike facilities



Contraflow lane in a residential area of Eugene, OR.
source: NACTO

TYPICAL CONDITION ON CAPITAL HEIGHTS AVE.



Example of proper bike lane signage (MUTCD R3-17)



Signage on contraflow lanes should be clearly legible. An "EXCEPT BICYCLES" supplemental plaque should be used in conjunction with all one way signs.



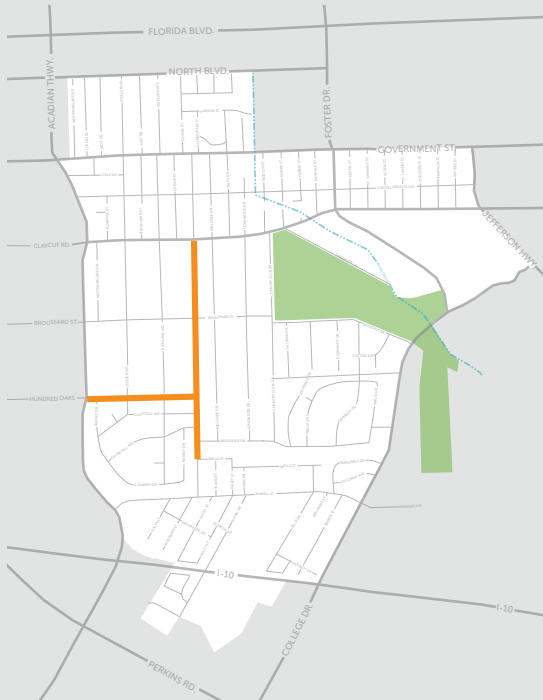
Example of MUTCD W6-3

DESIGN GUIDELINES:

- Install bike lane pavement markings (bike symbol or helmeted bicyclist symbol and arrow) at the beginning of each block or every 300 feet, whichever is less, in both directions.
- Replace existing bike lane signage with MUTCD R3-17 "Bike Lane" signs.
- Install solid double yellow lane marking to mark the contraflow lane.
- At cross streets, install "EXCEPT BIKES" supplemental plaque beneath existing R6-2 "ONE WAY" signs.
- Optional: Install modified "TWO WAY" signs (MUTCD W6-3) at each end of the street to indicate two-way bike travel.
- Remove tapered markings where Capital Heights approaches Jefferson Hwy., N. Foster, and Acadian Thwy., and replace with transitions per MUTCD, Part 9. Revised markings should include a dotted transition approximately 50 feet before each cross street where right turns are allowed from Capital Heights.
- Install additional intersection traffic controls on Capital Heights such as stop signs and stop bars so they are oriented to bicyclists in the contraflow lane.
- Install supplemental "EXCEPT BIKES" signs beneath all "DO NOT ENTER" (R5-1) signs.

5 | Conversion of existing bike lanes to buffered bike lanes

IMPROVEMENT LOCATIONS:



OVERVIEW:

Buffered bike lanes are an effective and economical way to provide increased safety to bicyclists. They not only provide increased visibility of bike lanes to motorists, but they also acting as a traffic calming feature by narrowing travel lanes.

In this context, Glenmore Ave. serves this area as the primary North-South bike boulevard.

APPROPRIATE APPLICATIONS:

- Anywhere a bike lane is considered
- On streets with lanes wide enough to accommodate the buffer zone
- On streets where traffic volume and/or speed is a concern
- As an economical alternative to bike lanes that are separated from travel lanes by a curb or any other type of physical barrier

IMPROVE EXISTING BIKE LANES ON:

GLENMORE AVE.

Wells St. to Claycut Rd.

HUNDRED OAKS

Acadian Thwy. to Glenmore Ave.



Buffered bike lane in Austin, TX, showing chevron buffer markings and dashed right turn transition
source: NACTO

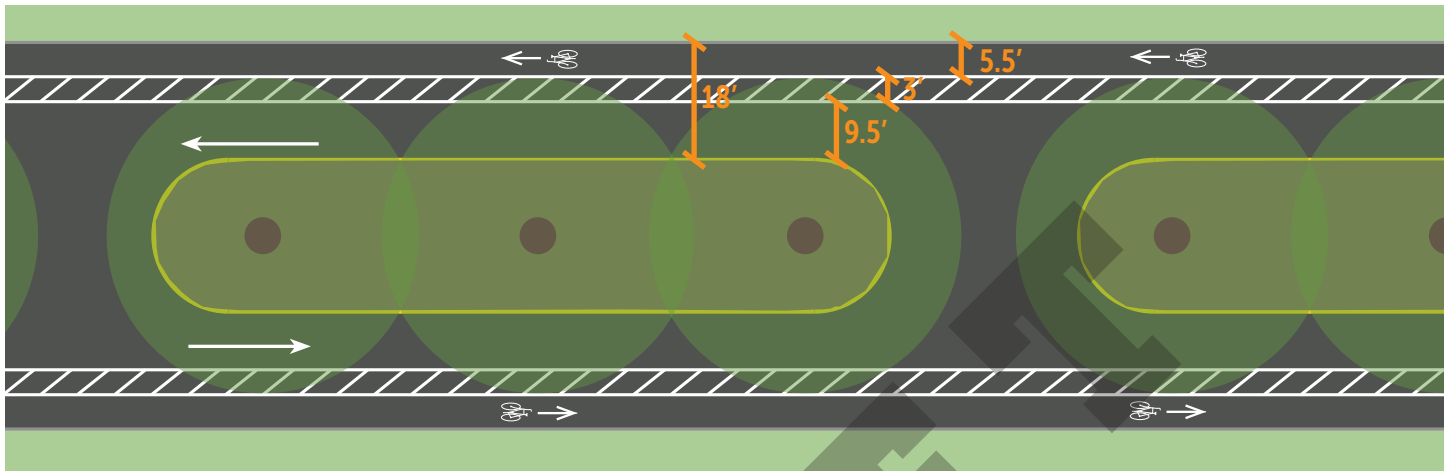


Buffered bike lane in a residential area of Cape Coral, FL, where simple solid white lines are used when the buffer zone is less than three feet wide.
source: NACTO



Buffered bike lane in conjunction with a high visibility crosswalk in Billings, MT
source: NACTO

TYPICAL CONDITION ON GLENMORE AVE.

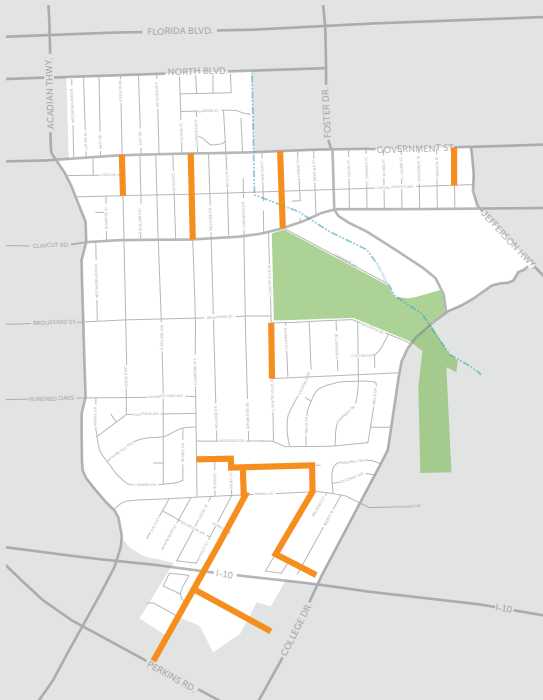


DESIGN GUIDELINES:

- Remove existing bike lane markings and replace with buffered bike lanes.
- Install buffered lane markings (two solid white lines with interior hatching) as per MUTCD guidelines.
- When approaching right turns, replace solid white lines with dashed lines to indicate a transition area to both vehicles and bicyclists.
- Install stop bars and stop signs at intersections when appropriate.
- Install bike lane pavement markings (bike symbol or helmeted bicyclist symbol and arrow) at the beginning of each block or every 300 feet, whichever is less, in both directions.

6 | Improvements to shared lanes

IMPROVEMENT LOCATIONS:



OVERVIEW:

There are a number of areas that either do not have space for, or do not warrant, dedicated bike lanes. Some of these areas serve as key connections between proposed or existing bike facilities, so it is important that they are signed and marked with the appropriate wayfinding and advisory signs and road markings.

APPROPRIATE APPLICATIONS:

- Anywhere bikes are present or desired
- On streets that do not have enough space to accommodate dedicated bike lanes
- On streets that do not warrant dedicated lanes due to low traffic volume
- Along designated bike routes- as wayfinding and directional elements

IMPLEMENT OR IMPROVE SHARED LANE FACILITIES ON:

COUNTRY CLUB DR.

Westdale Dr. to community trail

GLENMORE AVE.

Claycut Rd. to Government St.

STEELE BLVD.

Capital Heights Ave. to Government St.

MOORE ST.

Claycut Rd. to Government St.

NAIRN DR./VALLEY ST.*

Bawell St. to Perkins Rd.

RAPIDES ST.

Capital Heights Ave. to Government St.

VALLEY PARK NEIGHBORHOOD

Bike route to College Dr.

*Short term solution, see pg. 22 for long term solution



Temporary Shared Lane Markings (sharrows) were painted on the streets during the Street Smart demonstration weekend.
source: CPEX



"Share the Road" signs were also installed as part of the Street Smart demonstrations.
source: CPEX



DESIGN GUIDELINES:

- Install Shared Lane Marking "Sharrow" on streets, near center of travel lanes, in both directions.
- Sharrows shall be placed approximately 7 feet from the outside curb, and no less than 4 feet from the curb, especially on streets with on-street parking.
- The chevron portion of the sharrow should be oriented in the direction of the desired bike route.
- Custom bike route signage is highly recommended for areas that can only accommodate shared lanes and not dedicated bike lanes. Route signage directs bicyclists to certain destinations, while also making motorists aware of the presence of bicyclists.

7 | Intersection improvements (bike prioritization)

IMPROVEMENT LOCATION:



IMPROVE BICYCLE PRIORITIZATION AT:

GLENMORE AVE. AT CLAYCUT RD.

OVERVIEW:

The intersection of Glenmore Ave. and Claycut Rd. presents visibility and maneuvering challenges to both bicyclists and motorists.

Extension of the Glenmore Ave. median, tightening of corner radii, and legible street markings and signage decrease the overall size of the intersection and improve safety and visibility for all users.

APPROPRIATE APPLICATIONS:

- At odd-angled or wide intersections
- At intersections where a bike lane or cycle track crosses a heavily traveled road



Boulevard with extended median and designated U-turn area
source: NACTO

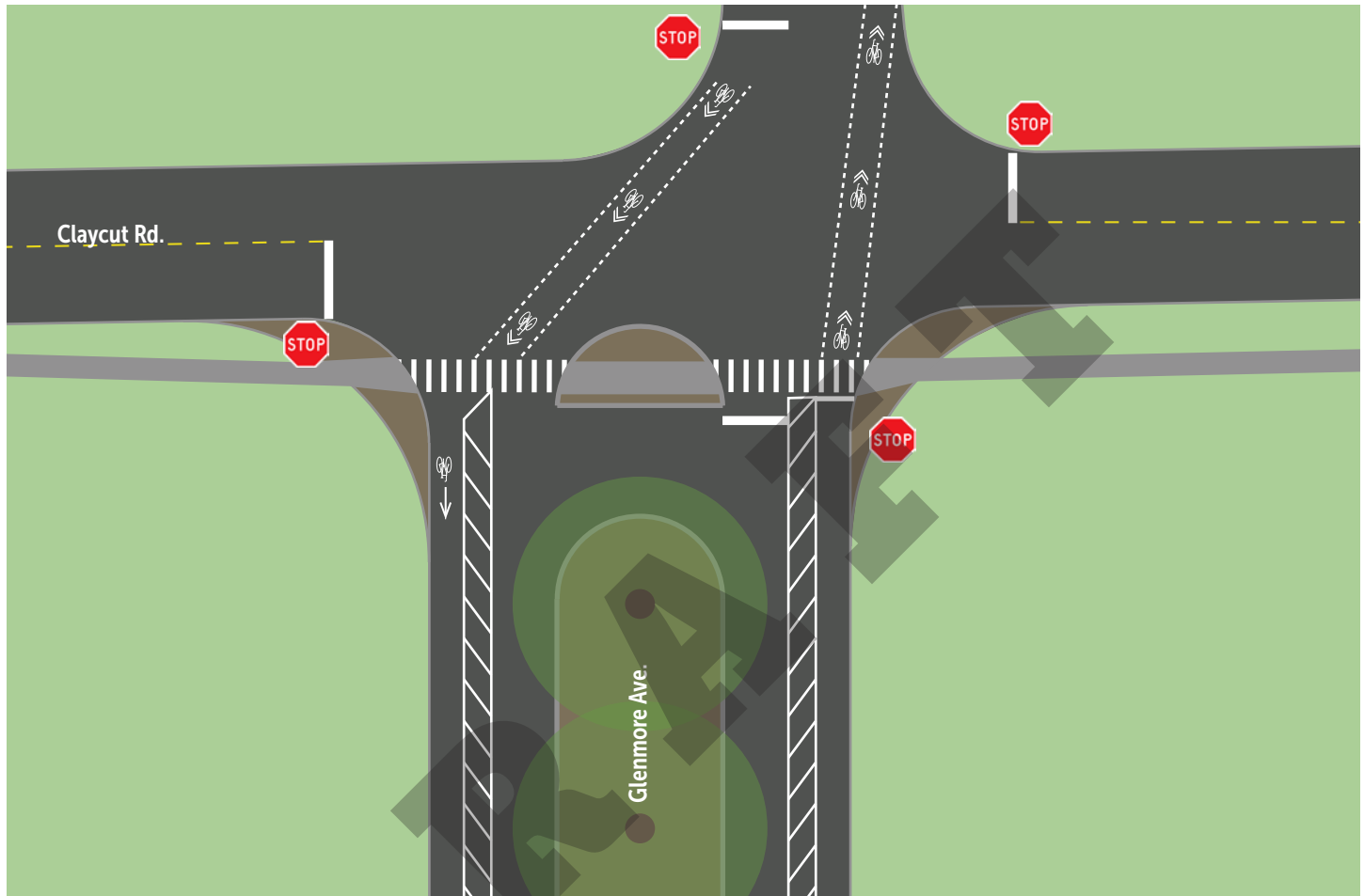


Bicycle refuges in medians provide bicyclists with a much safer option for crossing busy multi lane streets.
source: NACTO



The existing intersection presents a potentially confusing and dangerous crossing for all users.
source: CPEX

GLENMORE AT CLAYCUT DESIGN SCHEME:



DESIGN GUIDELINES:

- Install vertical curbs and tighten curb radii to slow down turning vehicles.
- Move stop sign forward, and install stop bars in vehicular and bike travel lanes.
- Install high visibility crosswalks across Glenmore.
- Add pedestrian refuge in extended median. Designate U-turn space in extended median.
- Demarcate desired path across intersection for bicyclists with dashed white lines and bike symbol.
- Utilize tightened corners and extended median as stormwater collection areas with slotted curbs, sunken planting areas, and stormwater-appropriate plants.

8 | Extended median (bike/ped prioritization)

IMPROVEMENT LOCATIONS:



INSTALL EXTENDED MEDIANS AT:

GOVERNMENT ST. AT STEELE BLVD.*

*Installation of an extended median at this location assumes that Government St. will be redesigned as a 3-lane road with center medians/turn lane.

OVERVIEW:

An extended median is an effective means to help bicyclists cross streets with multiple lanes. They can also be used to limit vehicles to right turns only.

Extended medians on Government St. help bridge bike facilities across this busy street.

APPROPRIATE APPLICATIONS:

- At intersections suitable for vehicles to make right turns only.
- At intersections where a bike lane or cycle track crosses a heavily traveled road.
- On streets wide enough to accommodate a median and bike refuge.



Boulevard with extended median and designated U-turn area

source: NACTO



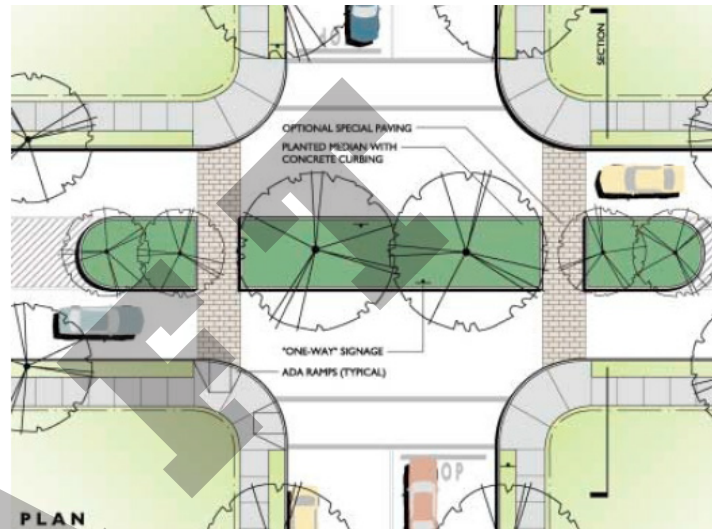
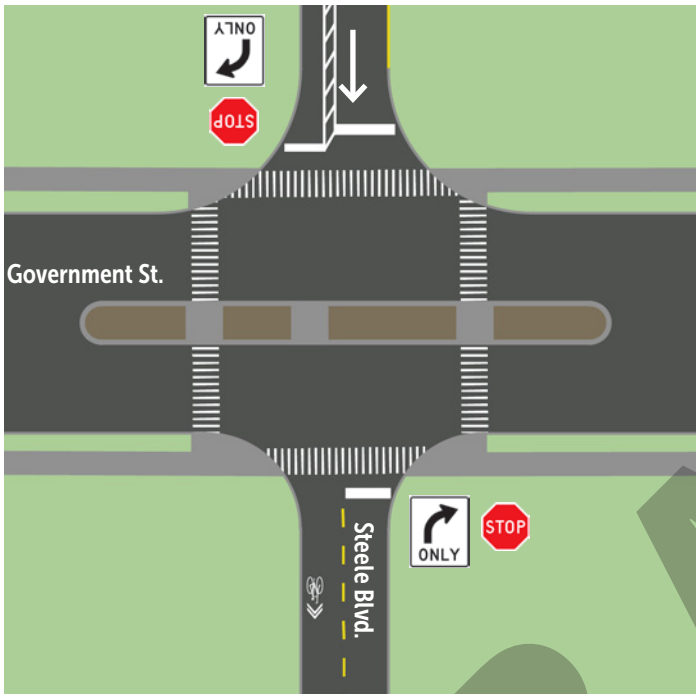
Bicycle refuges in medians provide bicyclists with a much safer option for crossing busy multi lane streets.

source: NACTO



The existing intersection of Capital Heights and Acadian has the potential for retrofit extended median

source: Google Maps



source: DPW's Residential Traffic Calming Manual

DESIGN GUIDELINES:

- Median shall extended beyond cross street to eliminate right turns and cross traffic for vehicles.
- While eliminating some movements for vehicles, extended medians should accommodate the safe and easy crossing of bicyclists and pedestrians.
- Median refuges for pedestrians should be at least 4 feet wide, and bicycle refuges should be at least 6 feet wide.
- Wherever possible, medians shall be designed to capture stormwater runoff using slotted curbs and sunken planting area.
- Planting areas should be planted with material that filters and treats stormwater runoff.
- Plantings should not be placed so that they interrupt the sight-line of crossing bicyclists and pedestrians, or that of oncoming vehicles.

9 | Traffic signal synchronization

IMPROVEMENT LOCATIONS:



SYNCHRONIZE TRAFFIC SIGNALS TO PRIORITIZE BICYCLISTS AT:

*CAPITAL HEIGHTS AVE. AT FOSTER DR.

*CAPITAL HEIGHTS AVE. AT JEFFERSON HWY.

OVERVIEW:

Synchronizing traffic signals in key areas creates a traffic-free space for bicyclists and pedestrians to cross a busy street that is not signalized.

In the same way that properly synchronized signals benefit traffic flow for motorists, a coordinated system can also help bicycle traffic flow smoothly and safely.

*The areas in question on Foster Dr. and Jefferson Hwy. will likely require a traffic study to determine the feasibility of this recommendation.

APPROPRIATE APPLICATIONS:

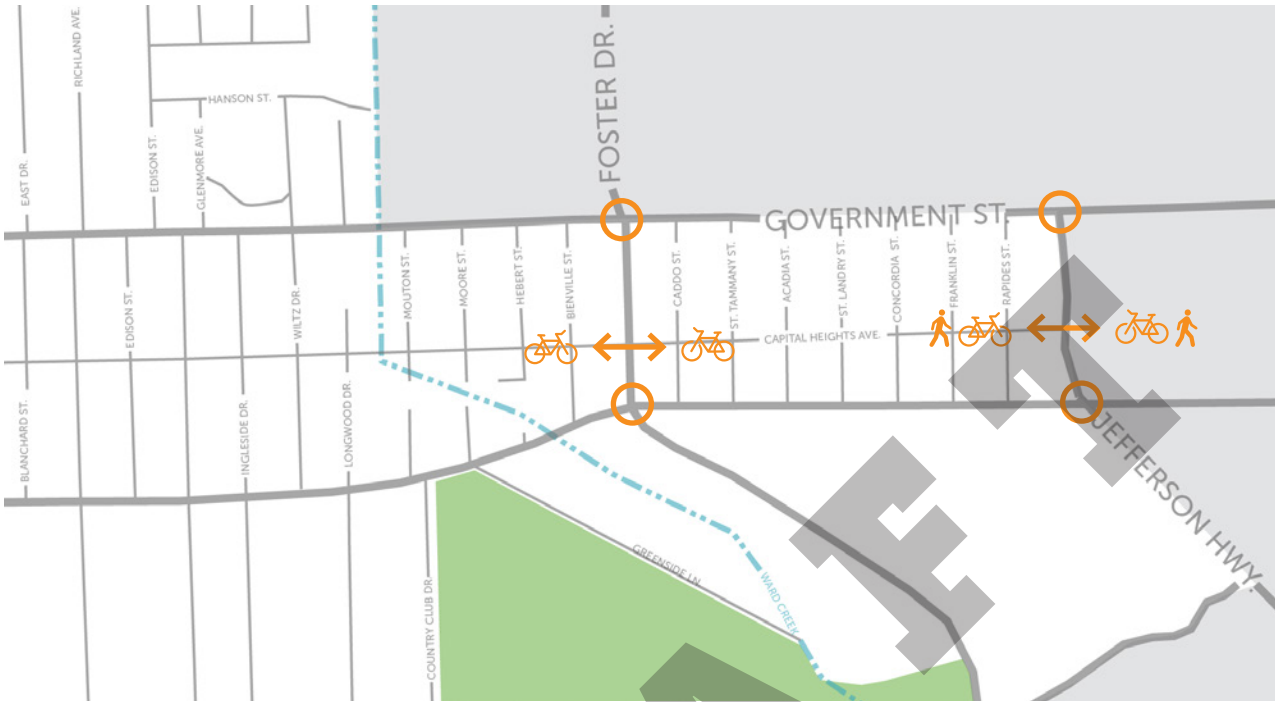
- In areas where a major bike route crosses a major roadway between two signals
- At intersections where a bike lane or cycle track crosses a heavily traveled road



Capital Heights Ave. at Jefferson Hwy.
source: Google Maps



Capital Heights Ave. at S. Foster Dr.
source: Google Maps



DESIGN GUIDELINES:

- Coordinate the timing of traffic signals at Government St and Foster Dr., and Claycut Rd. and Foster Dr. to allow for the clear crossing of bicyclists at Capital Heights Ave. and S. Foster Dr.
- This recommendation can be used in conjunction with recommendation 15, which calls for HAWK signals at these intersections.
- Coordinate the timing of traffic signals at Government St. and Jefferson Hwy., and Claycut Rd. and Jefferson Hwy. to allow for the clear crossing of bicyclists at Capital Heights Ave. and Jefferson Hwy.
- Install high visibility crosswalks at the intersection of Capital Heights Ave. and Jefferson Hwy.

10 | Bike lane transitions at intersections

IMPROVEMENT LOCATIONS:



OVERVIEW:

Intersection crossing markings are used to indicate the desired path for bicyclists. Markings of various types are used to indicate a bike lane crossing to motorists.

Typical markings range from dashed lines, solid painted green blocks, or modified bike and arrow symbols.

APPROPRIATE APPLICATIONS:

- On streets where a bike lane crosses an intersection
- In areas where visibility of bicyclists to motorists is a concern
- In intersections that can be potentially confusing for bicyclists to navigate

INSTALL IMPROVED BIKE LANE TRANSITIONS AT:

NEIGHBORHOOD INTERSECTIONS

not signalized

MAJOR INTERSECTIONS

signalized



Bike lane intersection crossing with modified "sharrow" symbol in Chicago, IL.

source: NACTO



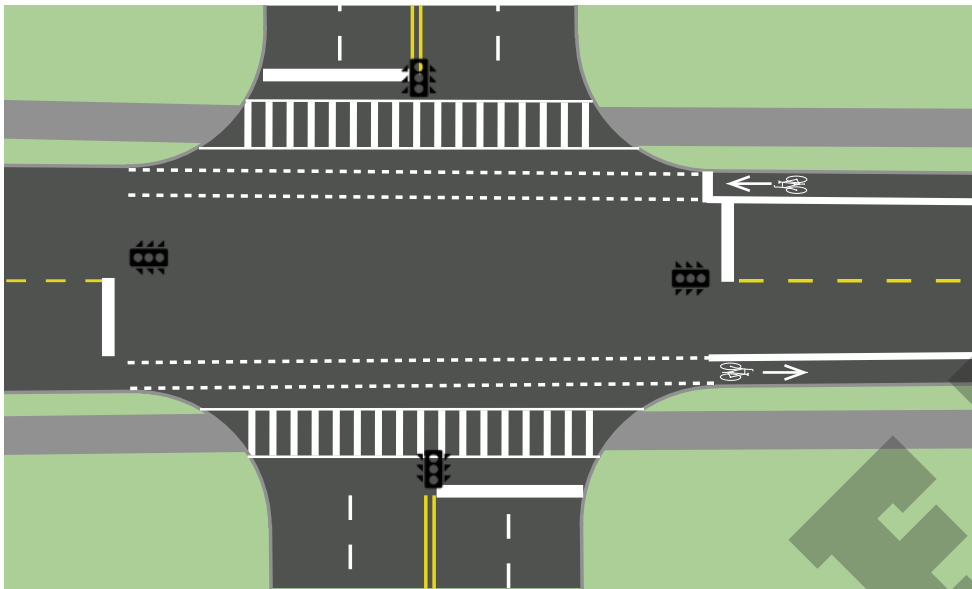
Dashed markings guide bicyclists across intersections, while also signifying the presence of bicyclists to motorists.

source: NACTO

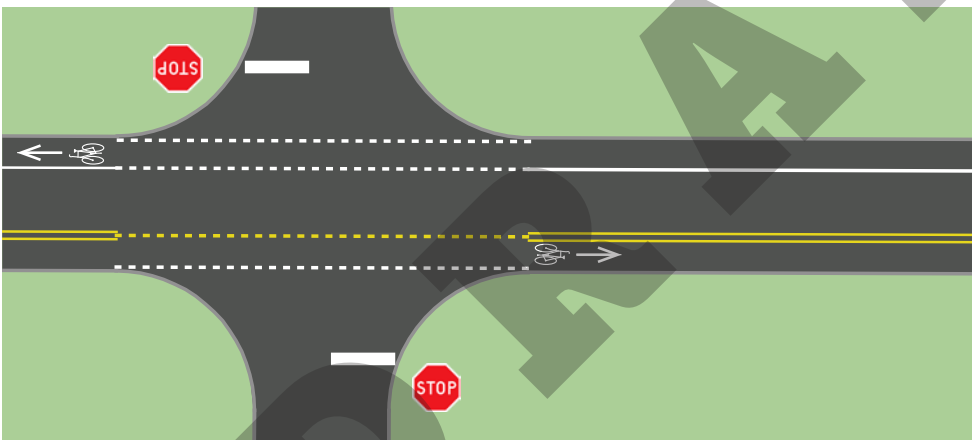


Large or complex intersections can be daunting or confusing for bicyclists, so clear markings are essential.

source: NACTO



Bike lane transition across a signalized intersection, in conjunction with crosswalks



Bike lane transition across a two-way stop neighborhood intersection

DESIGN GUIDELINES:

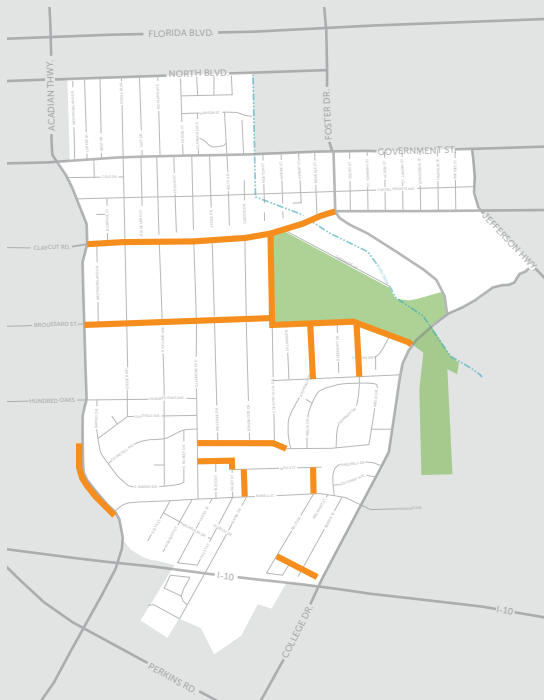
- Install dashed line or “elephant feet” markings to indicate the desired path of bicyclists across intersections.
- The dashed or dotted line shall conform to MUTCD standards (section 3B.08).
- Where bikes are expected to stop at an intersection, install white stop bars at intersection, ahead of stop bar in vehicular travel lane.
- Optional: install bike symbol markings between dashed lane lines for increased visibility of bike crossing.

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11 | New Sidewalks

IMPROVEMENT LOCATIONS:



OVERVIEW:

Sidewalks are a key component in a safe and connected neighborhood. Sidewalks with pedestrians a dedicated space to move along the streets without worrying about conflicts with vehicles.

While sidewalks on most streets would be ideal, there are many obstacles to installing sidewalks including mature trees, storm drains, utility lines, and right of way restrictions.

New sidewalks are proposed for key locations that make the most sense in terms of connectivity.

APPROPRIATE APPLICATIONS:

- Anywhere pedestrians are present or desired.
- On streets that link between other streets with sidewalks.

INSTALL NEW SIDEWALKS ON:

ACADIAN THWY.

Bawell St. to BRCVPA, (west side of street)

AVONDALE DR. AND ORMANDY DR.

Westdale Dr. to neighborhood trail

BROUSSARD ST.

Acadian Thwy. to Country Club Dr.

CLAYCUT RD.

Acadian Thwy. to Foster Dr. (South side of Claycut Rd.)

WEBB PARK

Along Claycut Rd., Country Club Dr., and Westdale Dr.

WOODSIDE DR., WELLS ST., BALIS DR., AND ALDRICH DR.

Fill in missing areas (see map)



A temporary "sidewalk" was added to Claycut Rd. to link Capital Heights to Webb Park.

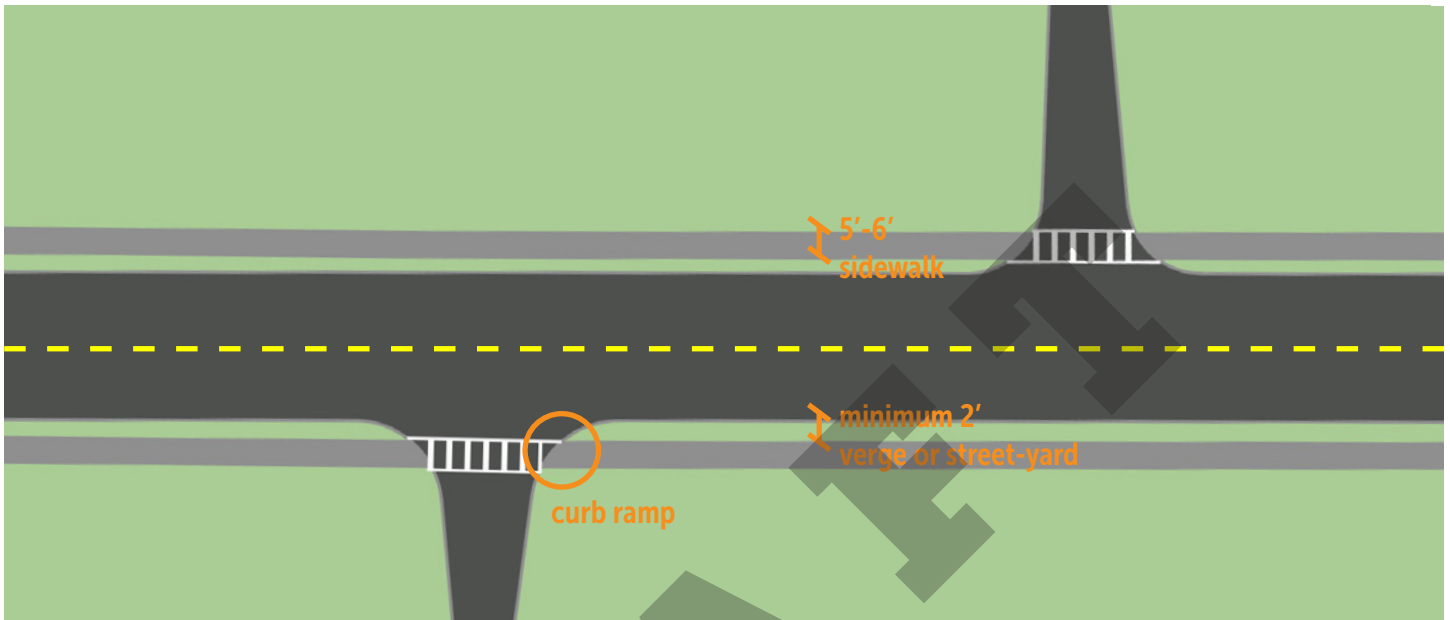
source: CPEX



This section of Myrtle Ave. has a sidewalk on only one side of the street.

source: Google Maps

TYPICAL DESIGN:



DESIGN GUIDELINES:

- Install concrete sidewalks, 5'-6' wide.
 - A 5'-wide sidewalk allows 2 people to walk side by side and addresses ADA requirements for passing areas.
- Sidewalks should be located as far back from the curb as the right of way and any obstructions allow.
- Install high visibility crosswalks where pedestrians are expected to cross streets.
- Where ever possible, install integrated concrete transit pads along bus routes.
- When possible, sidewalks shall be installed on both sides of the street with the following exceptions:
 - Claycut Rd.- only on the South side of the street due to presence of mature trees and steep grade change
 - Acadian Thwy.- West side of street between Bawell and BRCVPA

12 | Improvements to neighborhood trail and Ward Creek crossing

IMPROVEMENT LOCATIONS:



IMPROVE THE FOLLOWING LOCATIONS TO PRIORITIZE PEDESTRIANS:

MOORE ST.

Ward Creek crossing

WEBB PARK NEIGHBORHOOD TRAIL

Country Club Dr. to College Dr.

OVERVIEW:

The Webb Park neighborhood trail and the Ward Creek crossing on Moore St. are important linkages for bike and pedestrian users.

A few key improvements including re-striping, crosswalks, and signage can make the trail safer and more useful as a connection to other facilities.

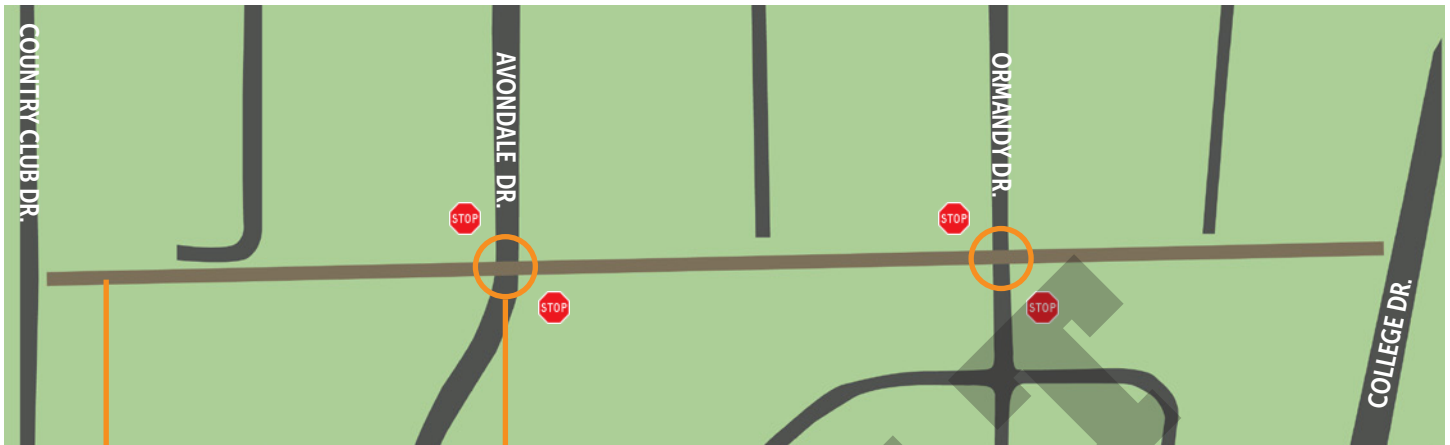
The Moore St. bridge can be made more accessible to bicyclists by removing the bollards and trimming the overgrown vegetation.



Ward Creek crossing at Moore St.
source: Google Maps



Webb Park neighborhood trail at College Dr.
source: Google Maps



Widen trail to 12 to 14 feet to safely accommodate bikes and pedestrians.

Install high visibility raised crosswalks where streets cross trail.



A temporary trail head was placed at the Country Club Dr. end of the trail for the Street Smart demonstration weekend.
source: CPEX



This neighborhood asset has the potential to be a gathering space for local residents.
source: CPEX

DESIGN GUIDELINES:

- Widen asphalt path to 10' wide or greater for two-way shared use path
- Install high visibility raised crosswalks where the trail crosses Ormandy and Avondale.
- Install signage to mark the beginning and end of the trail, as well as approaching street crossings.
- Trim overgrown plant material that may be obstructing the trail.
- Remove bollards from Moore St. bridge and trail to allow for easier bike access.
- Trim overgrown plant material that may be obstructing passage across the bridge.

13 | Improved intersections (bike/ped prioritization)

IMPROVEMENT LOCATIONS:



INSTALL IMPROVED INTERSECTIONS AT:

ACADIAN THWY. AT CAPITAL HEIGHTS AVE.
GOVERNMENT ST. AT EDISON ST.

OVERVIEW:

The intersection of Government St. and Edison St. is a key location for pedestrians to cross. Assuming Government St. will be redesigned as a 3-lane road, an extended median and pedestrian refuge will improve the safety of crossing pedestrians.

Reconfiguring the intersection of Capital Heights Ave. and Acadian Thwy. can improve safety and eliminate confusion for all users.

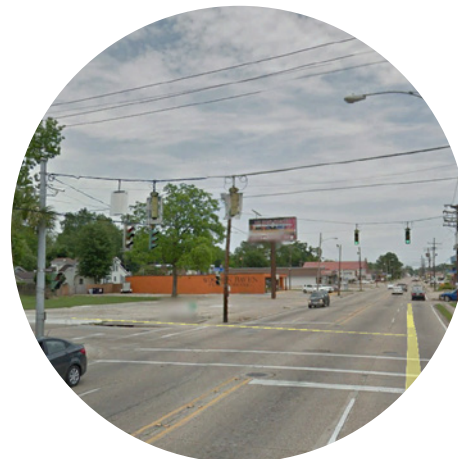
APPROPRIATE APPLICATIONS:

- At intersections where pedestrians frequently cross a busy street
- At intersections where pedestrians frequently cross a busy street



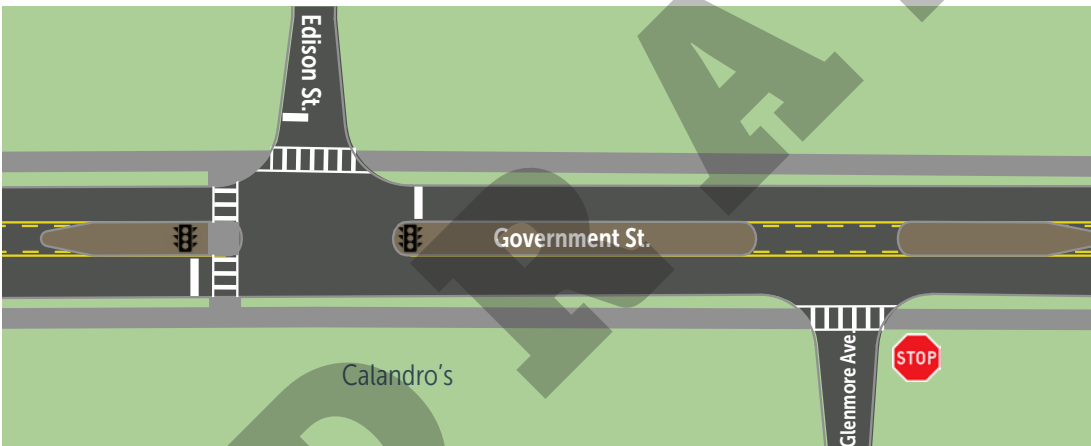
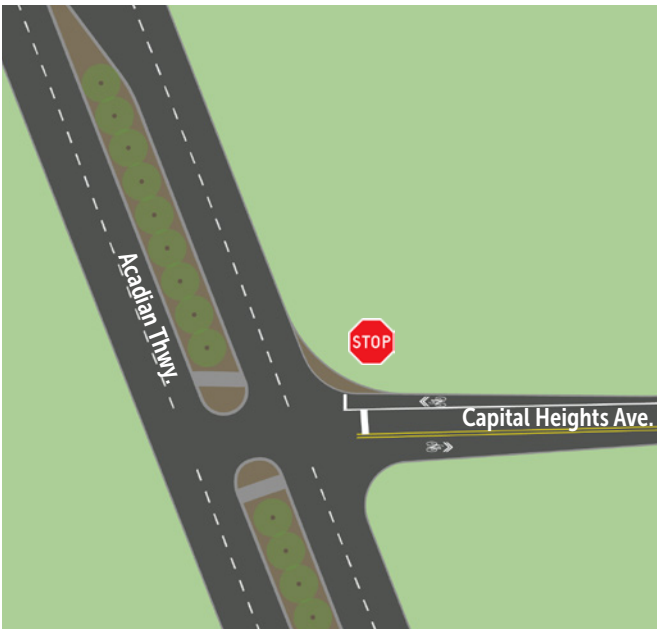
Similar to providing bike refuge, extended medians can provide the same service to pedestrians, while incorporating attractive landscaping.

source: NACTO



The existing condition is a dangerous situation where pedestrians often cross Government St., despite the lack of proper facilities.

source: Google Maps



DESIGN GUIDELINES:

- Median shall extend far enough to provide a pedestrian refuge at least 4-feet wide.
- Median shall extend far enough to provide a bicycle refuge at least 6-feet wide.
- Median and street shall be marked and signed appropriately to notify motorists of the presence of pedestrians and bicyclists.
- Wherever possible, medians shall be designed to capture stormwater runoff using slotted curbs and sunken planting area.
- Planting areas should be planted with material that filters and treats stormwater runoff.
- Plantings should not be placed so that they interrupt the sight-line of crossing bicyclists and pedestrians, or that of oncoming vehicles.

14 | Raised intersection

IMPROVEMENT LOCATION:



INSTALL A RAISED INTERSECTION AT:

COUNTRY CLUB DR. AT BROUSSARD ST.

OVERVIEW:

Raising an entire intersection to the level of the sidewalks has a number of benefits ranging from slower traffic and improved safety, to opportunities for creative intersection paving design.

The high number of pedestrians, speeding issues, and its proximity to Webb Park make this intersection a good candidate for this treatment.

APPROPRIATE APPLICATIONS:

- At intersections with frequent pedestrian crossings
- At intersections where speed may be an issue
- Raised intersections can be used to designate special zones such as near a park or school.



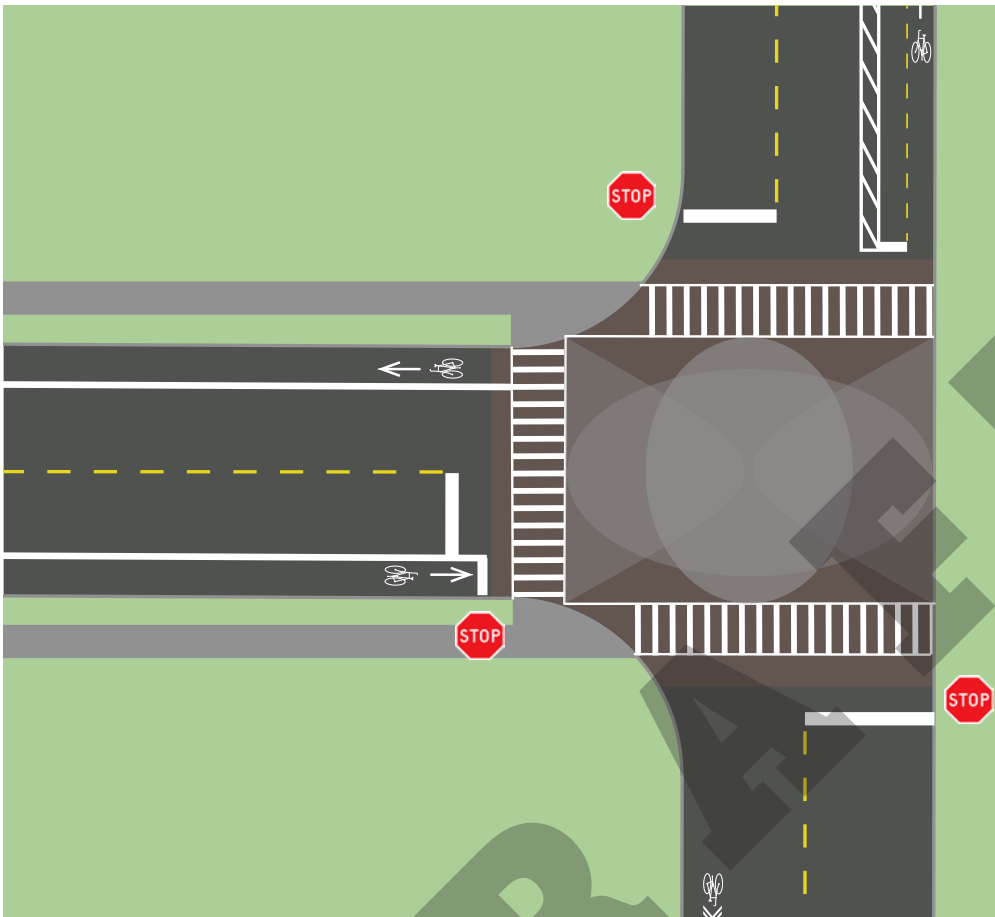
This raised intersection utilizes alternate paving for the crosswalk areas of the intersection.
source: Google Images



This example uses pavers in the intersection to provide a distinct contrast from the surrounding asphalt.
source: Google Images



The intersection of Broussard St. and Country Club Dr. was temporarily painted for the Street Smart demonstration weekend.
source: CPEX



CONCEPTUAL DESIGN FOR THE INTERSECTION OF BROUSSARD ST. AND COUNTRY CLUB DR.

DESIGN GUIDELINES:

- Install raised intersection that elevates the pedestrian crossing plane to the level of the sidewalk.
- Install appropriate warning signage to indicate to users that they are approaching a raised intersection.
- The slope of the crosswalk edge should not exceed 1:10 or be less than 1:25.
- Ideally, the crossing surface should be made of unit pavers in a contrasting color to the surrounding pavement.
- The slopes and edges should be made of concrete for maximum durability.
- Raised intersections should be designed as to not interfere with street drainage.

15 | HAWK beacon & crosswalk

IMPROVEMENT LOCATIONS:



INSTALL HAWK BEACON AND CROSSWALK AT:

CAPITAL HEIGHTS AVE. AT FOSTER DR.

CAPITAL HEIGHTS AVE. AT JEFFERSON HWY.



HAWK signal on a busy street.
source: Google Images

OVERVIEW:

A high intensity activated crosswalk, or HAWK, beacon is a pedestrian activated traffic signal used to give pedestrians a clear and safe road crossing.

The number of neighborhood pedestrians who wish to cross Jefferson Hwy. at Capital Heights Ave. to access commercial services and amenities makes this a suitable location for this treatment.



HAWK signal and high visibility crosswalk on a busy street.
source: bikepedinfo.org

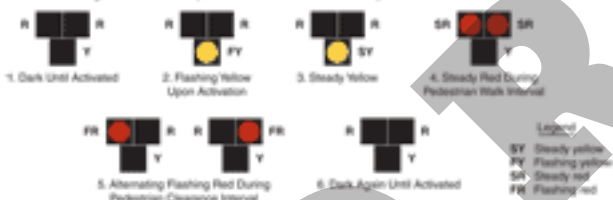
APPROPRIATE APPLICATIONS:

- At locations where a traffic engineering study finds the location in question to be suitable
- Variables include traffic volume and speed, as well as the gaps in traffic that may not allow for a safe pedestrian crossing

PROPOSED LOCATION FOR HAWK BEACON



Figure 4F-3. Sequence for a Pedestrian Hybrid Beacon



Signal sequencing per MUTCD

DESIGN GUIDELINES:

- The HAWK beacon should be installed at least 100 feet from side streets or driveways that are controlled by STOP or YIELD signs.
- Parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the marked crosswalk, or site accommodations should be made through curb extensions or other techniques to provide adequate sight distance.
- The installation should include suitable standard signs and pavement markings.
- If installed within a signal system, the HAWK beacon should be coordinated with the signal system.
- Install high visibility crosswalks across Jefferson Hwy. in coordination with HAWK beacon.

16 | Crosswalk & traffic signal improvements

IMPROVEMENT LOCATIONS:



OVERVIEW:

High visibility crosswalks incorporate bold striping, alternate paving materials, and even flashing pavement lights to improve visibility of the crossing to both drivers and pedestrians.

Pedestrian countdown signals help pedestrians better gauge how much time they have to make it across an intersection.

APPROPRIATE APPLICATIONS:

- Anywhere pedestrians cross a street
- At crossings where driver visibility is a concern
- At crossings where speed is a concern
- High visibility crosswalks are especially useful at mid block crossings

INSTALL CROSSWALKS AND IMPROVED TRAFFIC SIGNALS AT:

ACADIAN THWY. AT:

Claycut Rd., Broussard St., Bawell St., & Hundred Oaks Ave.

BAWELL ST. AT NAIRN DR. & COLLEGE DR.

CLAYCUT RD. AT MOORE ST.

COLLEGE DR. AT I-10 RAMP

CAPITAL HEIGHTS AT JEFFERSON HWY.

GOVERNMENT ST. AT EDISON ST.

NEIGHBORHOOD TRAIL AT:

Ormandy Dr. & Avondale Dr.



High visibility crosswalks across a neighborhood street.

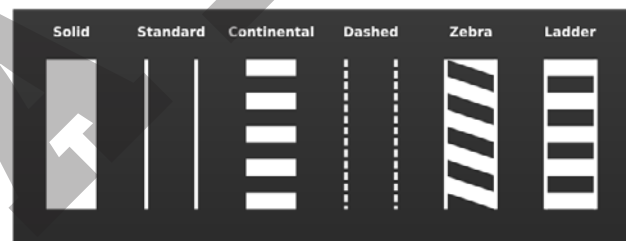
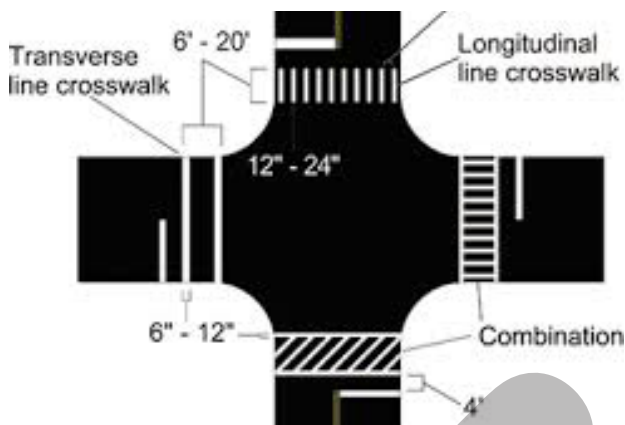
source: NACTO



High visibility crosswalks across a multi-lane commercial street.

source: NACTO

Figure 4E-1. Typical Pedestrian Signal Indications



STANDARD STYLES AND LAYOUT FOR HIGH VISIBILITY CROSSWALKS

DESIGN GUIDELINES:

- Install high visibility crosswalks so that they are aligned as closely as possible with the sidewalk or pedestrian zone.
- Utilize ladder, zebra, or continental style crosswalk markings to increase visibility.
- Stop bars should be located 4 feet behind the crosswalk.
- Install ADA-compliant ramps to access crosswalk wherever necessary.
- Install traffic signal with pedestrian countdowns at the following intersections:
 - Acadian Thwy. at Claycut Rd.
 - Acadian Thwy. at Broussard St.
 - Acadian Thwy. at Bawell St.

Recommendations

TRAFFIC CALMING NETWORK

Level I elements

- 1 | **High visibility crosswalks** (BT, CH, VP, WP)
 - Acadian Thwy. at Bawell St., Hundred Oaks Ave., Broussard St., Claycut Rd.
 - Bawell St. at Nairn and College Dr.
 - College Dr. at I-10 ramp
 - Claycut Rd. at Moore St.
 - Capital Heights Ave. at Jefferson Hwy.
 - Government St. at Edison St.
 - Neighborhood trail at Avondale Dr. and Ormandy Dr.
 - North Blvd. at Peachtree Blvd.
- 2 | **Stop sign and street sign improvements; speed limit reduction** (BT, CH, VP, WP)
 - Stop signs on Capital Heights Ave., Hundred Oaks Ave., Bawell St., Claycut Rd.
 - Street sign replacement
 - Speed limit reduction on non-striped streets
- 3 | **Lane narrowing (re-striping)** (BT, CH, WP)

<ul style="list-style-type: none">• Steele Blvd.• Capital Heights Ave.• Broussard St.• Hundred Oaks Ave.• Glenmore Ave.	<ul style="list-style-type: none">• Country Club Dr.• Westmoreland Ave.• Lovers Ln.• Edison St.
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Level II elements

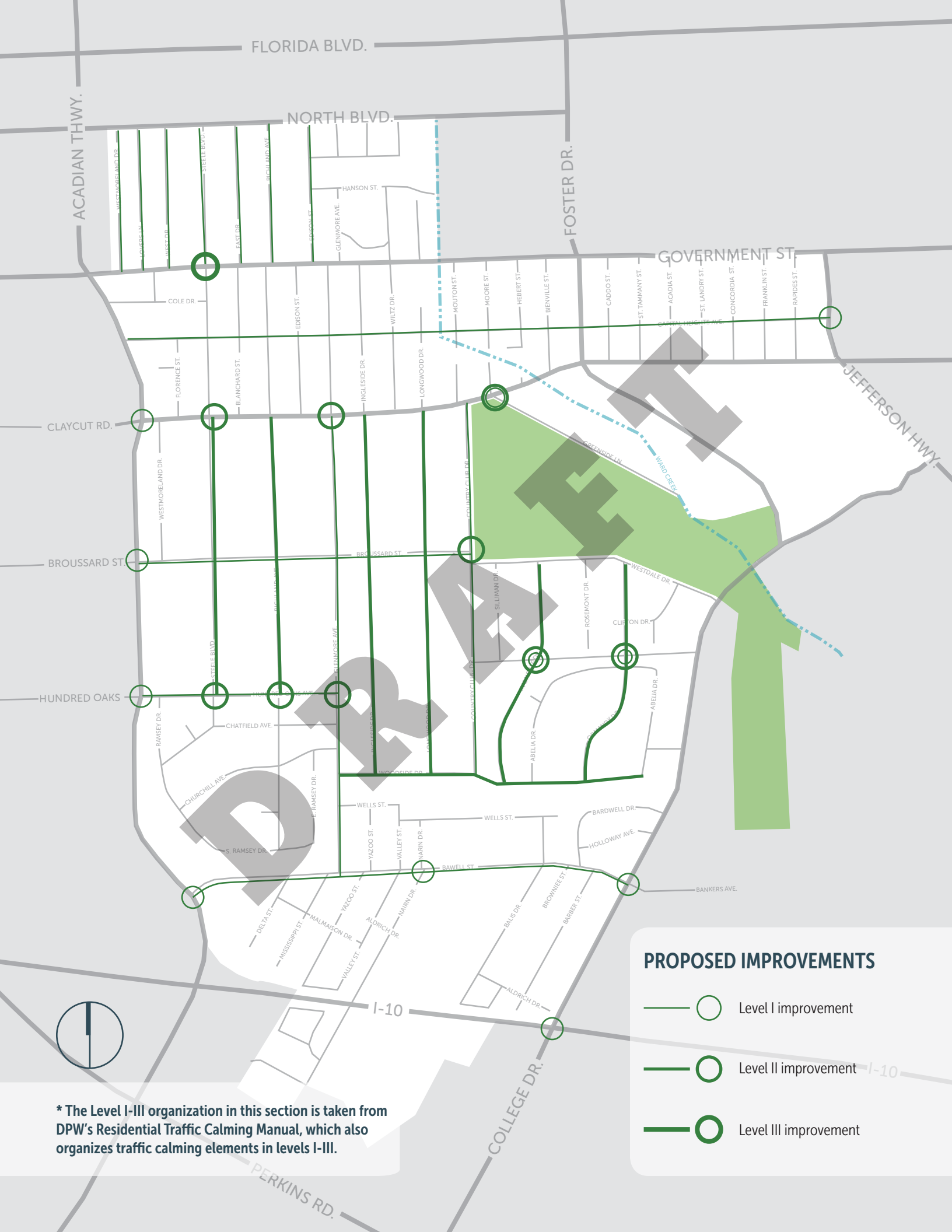
- 4 | **Raised crosswalks** (BT, WP)
 - Neighborhood trail at Ormandy Dr. and Avondale Dr.
 - Steele Blvd. at Claycut Rd.
 - Moore St. at Claycut Rd.
- 5 | **Raised intersections** (WP)
 - Country Club Dr. at Broussard St.
- 6 | **Traffic chokers** (BT, WP)
 - East Dr.
 - Ingleside Dr.
 - Longwood Dr.
 - Richland Ave.
 - West Dr.
- 7 | **Chicanes** (BT, WP)
 - Avondale Dr.
 - Ormandy Dr.
 - Woodside Dr.

Level III elements

- 8 | **Extended median** (BT, CH)
 - Government St. at Steele Blvd.

BT= Bernard Terrace
CH= Capital Heights
VP= Valley Park
WP= Webb Park





FLORIDA BLVD.

NORTH BLVD.

ACADIAN THWY.

FOSTER DR.

GOVERNMENT ST.

JEFFERSON HWY.

CLAYCUT RD.

BROUSSARD ST.


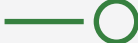
HUNDRED OAKS

I-10

COLLEGE DR.

PERKINS RD.

PROPOSED IMPROVEMENTS

-  Level I improvement
-  Level II improvement
-  Level III improvement

* The Level I-III organization in this section is taken from DPW's Residential Traffic Calming Manual, which also organizes traffic calming elements in levels I-III.



1 | High visibility crosswalks

IMPROVEMENT LOCATIONS:



OVERVIEW:

High visibility crosswalks incorporate bold striping, alternate paving materials, and even flashing pavement lights to improve visibility of the crossing to both drivers and pedestrians.

These improved crosswalks are recommended for a number of busy intersections throughout the Street Smart zone.

APPROPRIATE APPLICATIONS:

- Anywhere pedestrians cross a street
- At crossings where driver visibility is a concern
- At crossings where speed is a concern
- High visibility crosswalks are especially useful at mid block crossings

INSTALL HIGH VISIBILITY CROSSWALKS AT:

ACADIAN THWY. AT

Bawell St., Hundred Oaks Ave., Broussard St., Claycut Rd.

AVONDALE DR. AND ORMANDY DR. AT

Neighborhood trail

BAWELL ST. AT

Nairn Dr. and College Dr.

CAPITAL HEIGHTS AVE. AT JEFFERSON HWY.

CLAYCUT RD. AT MOORE ST.

COLLEGE DR. AT I-10 RAMP

GOVERNMENT ST. AT EDISON ST.

NEIGHBORHOOD TRAIL AT

NORTH BLVD. AT PEACHTREE BLVD.



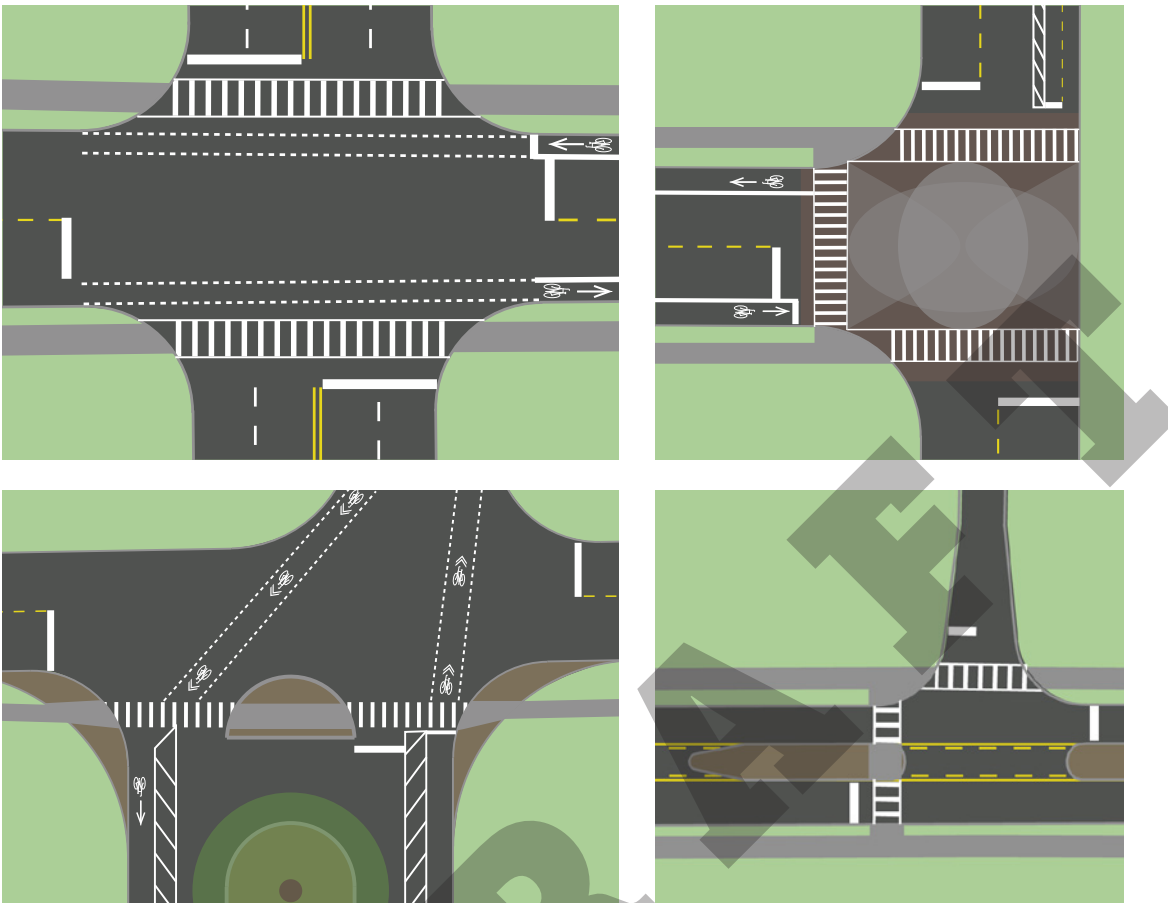
High visibility crosswalks across a neighborhood street.

source: NACTO

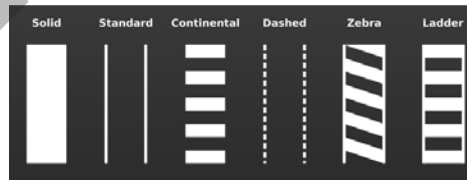


High visibility crosswalks across a multi-lane commercial street.

source: NACTO



These are a few of the numerous applications of high visibility crosswalks that are recommended for the Street Smart zone.

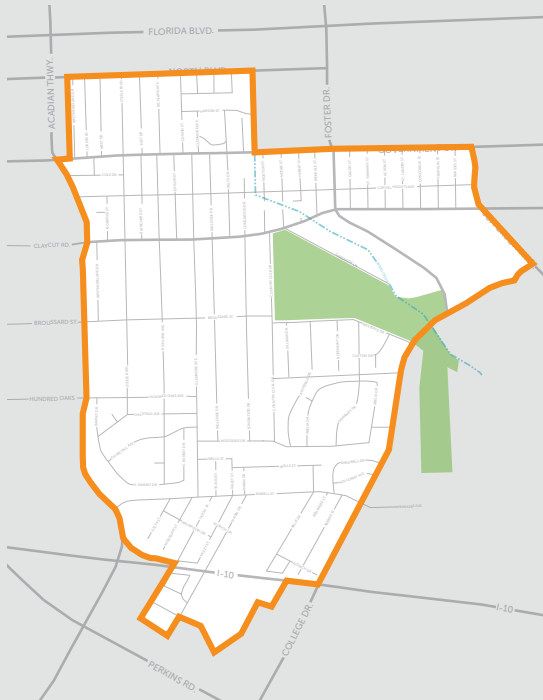


DESIGN GUIDELINES:

- Install high visibility crosswalks so that they are aligned as closely as possible with the sidewalk or pedestrian zone.
- Utilize ladder, zebra, or continental style crosswalk markings to increase visibility.
- Stop bars should be located 4 feet behind the crosswalk.
- Install ADA-compliant ramps to access crosswalk wherever necessary.
- Install alternate paving crosswalks on newly constructed or re-constructed streets.
- Alternate paving materials may include: unit pavers, concrete (on asphalt streets), or other materials that provide visual and textural contrast to the surrounding street.

2 | New signage and speed limit reduction

IMPROVEMENT LOCATIONS:



OVERVIEW:

Lower speed limits and new high visibility signage can be effective at slowing down traffic through neighborhood streets.

The Department of Public Works is already in the process of replacing signs and lowering speed limits.

INSTALL NEW SIGNAGE AND IMPLEMENT SPEED LIMIT REDUCTION:

STOP SIGNS ON:

Capital Heights Ave., Hundred Oaks Ave., Bawell St., Claycut Rd.

STREET SIGN REPLACEMENT

SPEED LIMIT REDUCTION ON NON-STRIPED STREETS



MUTCD R2-1 signage for new, lower speed limit on non-stripped neighborhood streets



Updated custom high visibility street signs in the Spanishtown neighborhood of Baton Rouge have a high reflectivity, which makes them more visible to drivers at night.

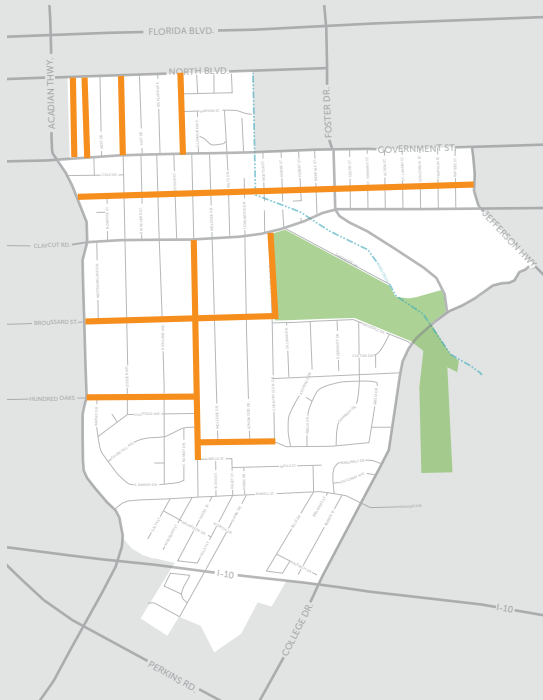
DESIGN GUIDELINES:

- Speed limit reduction from 30 to 25 MPH on non-stripped neighborhood streets is already underway.
- New high visibility street, stop, and speed limit signs are to be installed throughout the zone.
- *Install appropriately-spaced STOP signs on:
 - Capital Heights Ave.
 - Hundred Oaks Ave.
 - Bawell St.
 - Claycut Rd.

*Stop signs should be spaced so that they have maximum effectiveness in slowing down drivers.

3 | Lane narrowing (re-striping)

IMPROVEMENT LOCATIONS:



RE-STRIPE TO NARROW THE TRAVEL LANES ON:

- BROUSSARD ST. (COUNTRY CLUB TO ACADIAN)
- CAPITAL HEIGHTS AVE. (ENTIRE LENGTH)
- COUNTRY CLUB DR. (CLAYCUT TO BROUSSARD)
- EDISON ST. (BERNARD TERRACE)
- GLENMORE AVE. (WELLS TO CLAYCUT)
- HUNDRED OAKS AVE. (ACADIAN TO GLENMORE)
- LOVERS LN. (BERNARD TERRACE)
- STEELE BLVD. (BERNARD TERRACE)
- WESTMORELAND DR. (BERNARD TERRACE)
- WOODSIDE DR. (COUNTRY CLUB TO GLENMORE)

OVERVIEW:

Lane narrowing by re-striping is a simple and cost-effective way to slow traffic.

In many cases throughout the recommendations, lane narrowing is a byproduct of the addition of bike lanes or other elements.

APPROPRIATE APPLICATIONS:

- On streets where traffic calming is desired.
- On streets with lanes that are wider than necessary.
- On streets with where bike lanes are added within the existing roadway width.

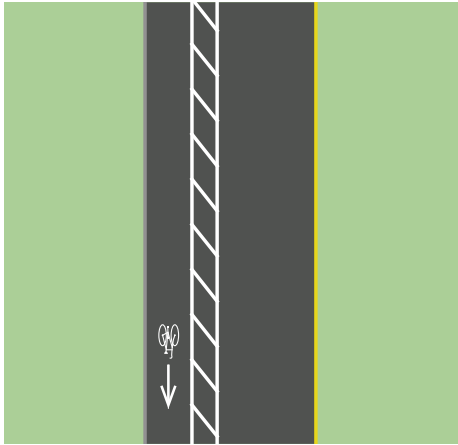


Extra wide streets can be narrowed through the addition of a striped buffer at the outside edge of the street.
source: CPEX

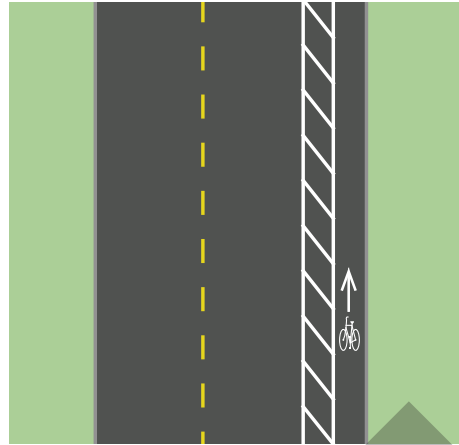


Country Club Dr. was temporarily narrowed by the addition of bike lanes during the Street Smart demonstrations.
source: CPEX

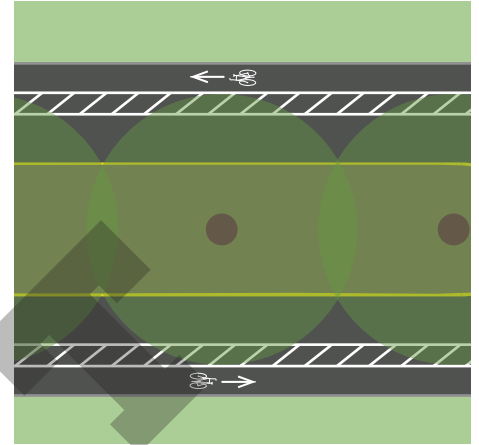
Steele Blvd.



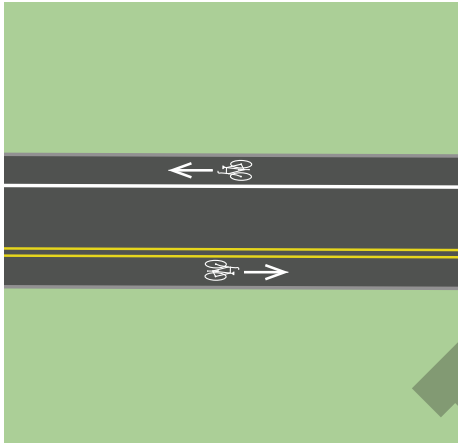
Lovers Ln.



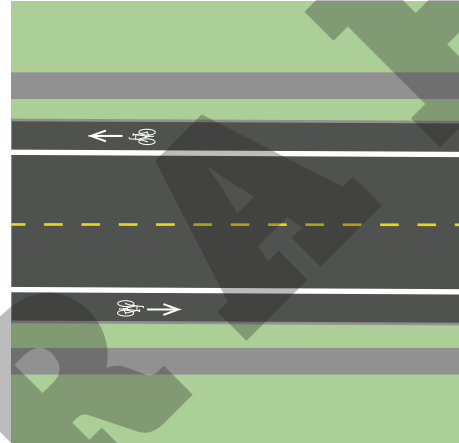
Glenmore Ave.



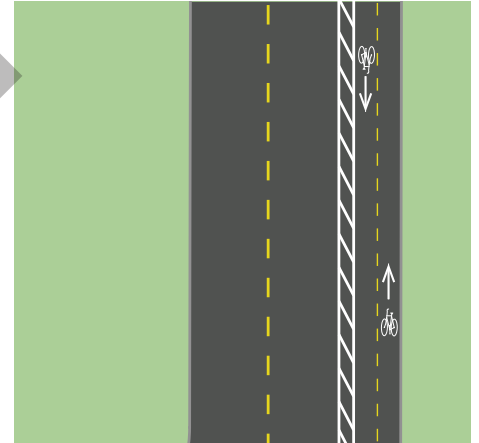
Capital Heights Ave.



Brossard St.



Country Club Dr.



EXAMPLES OF RE-STRIPING ON VARIOUS STREETS THROUGHOUT THE STREET SMART ZONE

DESIGN GUIDELINES:

- Re-stripe to create narrower travel lanes on streets where a bike lane is being added within the existing street.
- Layout of street markings shall conform to local and MUTCD guidelines for road markings
- On wide streets that do not have a bike lane, wider striping or a striped buffer on the outside of the lane can create the same effect of narrower lanes.

4 | Raised crosswalks

IMPROVEMENT LOCATIONS:



OVERVIEW:

Raised crosswalks are an improved version of standard high visibility crosswalks. Raised crossings allow pedestrians to cross a street at the same level as the sidewalk. This creates a raised area in the street that slows traffic.

Raised crosswalks often incorporate paving material that is different from the street. This adds another level of awareness to motorists as they approach and cross a raised crosswalk.

APPROPRIATE APPLICATIONS:

- Anywhere pedestrians regularly cross a street
- On streets where speed is a concern
- Especially beneficial near schools or parks

INSTALL RAISED CROSSWALKS AT:

CLAYCUT RD.

at Moore St. & Steele Blvd.

NEIGHBORHOOD TRAIL

at Ormandy Dr. & Avondale Dr.



This mid-block raised crosswalk is a simple design made of asphalt, which is consistent with the surrounding street.

source: pedbikesafe.org



This design utilizes improved features such as unit pavers and a solar-powered flashing signal.

source: pedbikesafe.org

TYPICAL DESIGN:



source: DPW's Residential Traffic Calming Manual



These raised crosswalks utilize contrasting pavers to distinguish the crosswalk from the street.

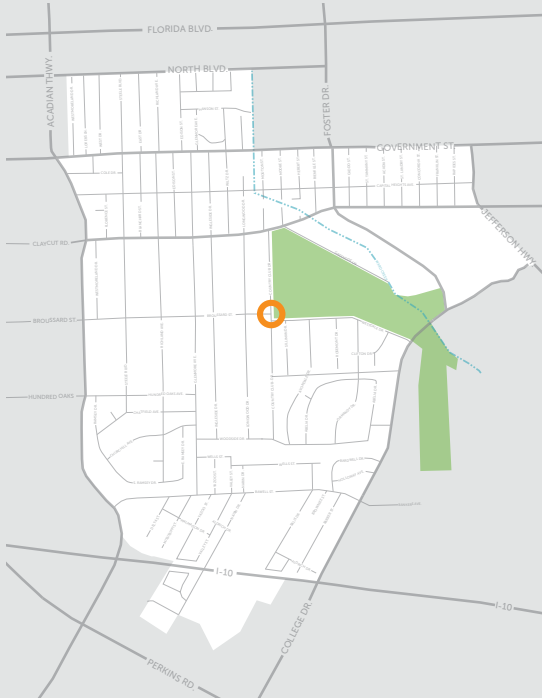
source: pedbikesafe.org

DESIGN GUIDELINES:

- Install raised crosswalks that elevate the crossing plane to the level of the sidewalk.
- Install MUTCD W11-2 signage to warn drivers that they are approaching the crossing.
- The slope of the crosswalk edge should not exceed 1:10 or be less than 1:25.
- Ideally, the crossing surface should be made of unit pavers in a contrasting color to the surrounding pavement.
- The slopes and edges should be made of concrete for maximum durability.
- Raised crosswalks should be designed as to not interfere with street drainage.

5 | Raised intersections

IMPROVEMENT LOCATION:



INSTALL RAISED INTERSECTION AT:

COUNTRY CLUB DR. AT BROUSSARD ST.



In this example the field of the intersection is paved with unit pavers, providing a distinct contrast from the surrounding asphalt.
source: fruitville210.org

OVERVIEW:

Raising an entire intersection to the level of the pedestrian plane has a number of benefits, ranging from slower traffic, improved safety, to opportunities for creative intersection paving design.

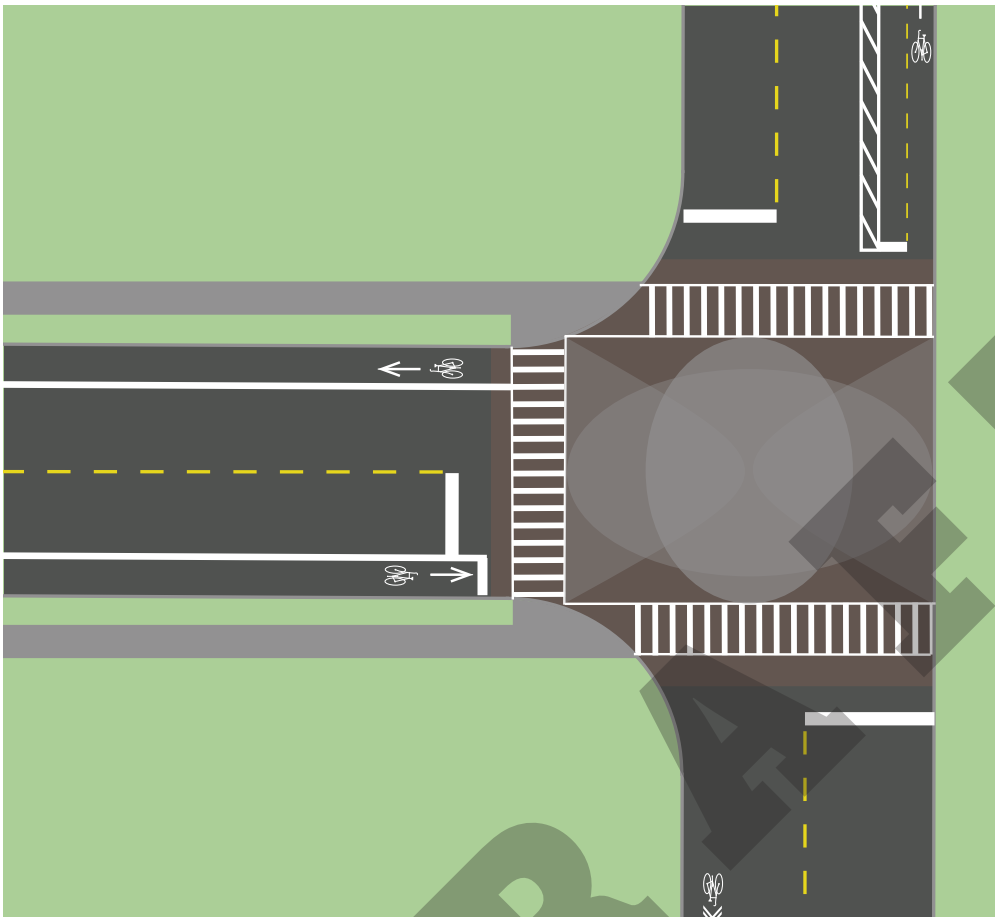
The intersection of Broussard St. and Country Club Dr. is a good fit for this treatment because of the high number of pedestrians, speeding issues, and its proximity to Webb Park.

APPROPRIATE APPLICATIONS:

- At intersections with frequent pedestrian crossings
- At intersections where speed may be an issue
- Raised intersections can be used to designate special zones such as near a park or school



This raised intersection utilizes alternate paving for the crosswalk areas of the intersection.
source: njbikeped.org



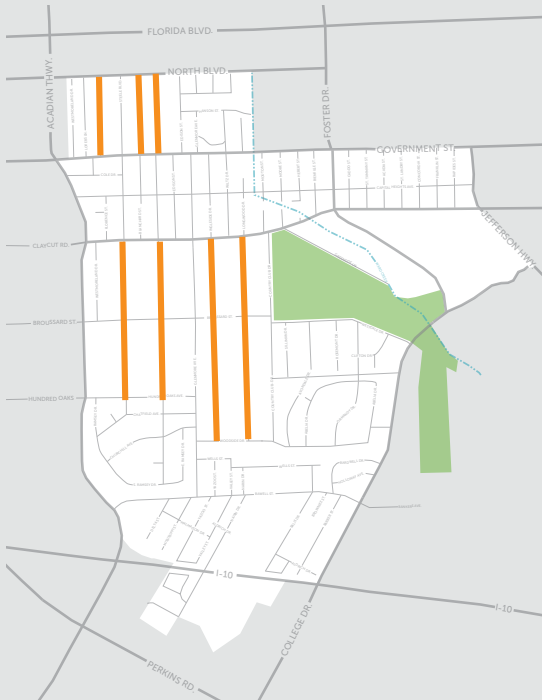
CONCEPTUAL DESIGN FOR THE INTERSECTION OF BROUSSARD ST. AND COUNTRY CLUB DR.

DESIGN GUIDELINES:

- Install raised intersection that elevates the pedestrian crossing plane to the level of the sidewalk.
- Install MUTCD signage to warn drivers that they are approaching the raised intersection
- The slope of the crosswalk edge should not exceed 1:10 or be less than 1:25.
- Ideally, the crossing surface should be made of unit pavers in a contrasting color to the surrounding pavement.
- The slopes and edges should be made of concrete for maximum durability.
- Raised intersections should be designed as to not interfere with street drainage.

6 | Traffic chokers

IMPROVEMENT LOCATIONS:



OVERVIEW:

Mid-Block chokers narrow the roadway for a short distance with an extended curb. This results in a yield situation in both directions, thus slowing traffic speeds.

Chokers are a good way to incorporate stormwater management and landscape elements into neighborhood streets.

APPROPRIATE APPLICATIONS:

- On streets where speed control is desired
- On streets where some on-street parking can be eliminated
- Chokers can be useful on streets with stormwater drainage issues.

INSTALL TRAFFIC CHOKERS ON:

EAST DR. *

Between Government St. and North Blvd.

INGLESIDE DR.

Between Woodside Dr. and Claycut Rd.

LONGWOOD DR.

Between Woodside Dr. and Claycut Rd.

RICHLAND AVE.

Between Hundred Oaks Ave. and Claycut Rd.; Government St. to North Blvd.*

STEELE BLVD.

Between Hundred Oaks Ave. and Claycut Rd.

WEST DR.*

Between Government St. and North Blvd.

*Alternative to restriping, adding bike lanes; pg. 20



This temporary traffic choker was installed as part of the Street Smart demonstration weekend.

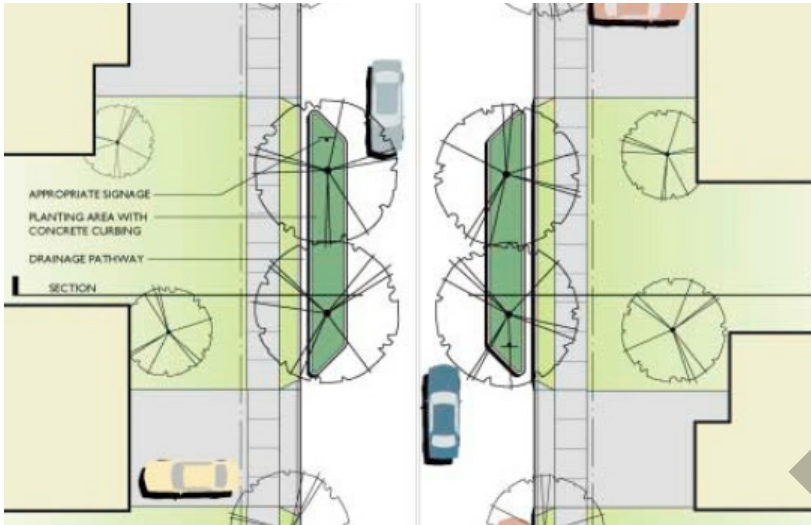
source: CPEX



A newly installed choker in Alexandria, VA. In this case, the choker is separated from the curb, allowing for drainage.

source: njbikeped.org

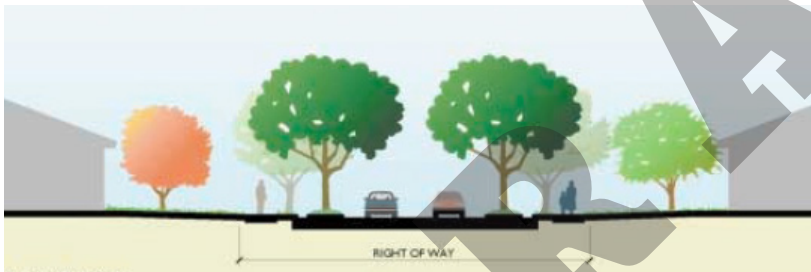
TYPICAL DESIGN:



source: DPW's Residential Traffic Calming Manual



source: DPW's Residential Traffic Calming Manual



source: DPW's Residential Traffic Calming Manual

DESIGN GUIDELINES:

- Chokers shall be placed approximately in the middle of the block to slow drivers.
- Due to varying street widths, each choker will vary slightly in design. However, all chokers will narrow the roadway to a width that allows for one car to pass.
- Proper signage approaching and at the choker is necessary to notify drivers of the yielding procedure.
- Whenever applicable, chokers should be designed to accommodate stormwater runoff through slotted curbs and a sunken planting area.
- Chokers should be planted with plants that treat stormwater, as well as trees. However, plantings shall not interfere with driver sight-lines.

7 | Chicanes

IMPROVEMENT LOCATIONS:



OVERVIEW:

Chicanes are, in this case, retrofits that convert a straight street into a curved one. This curved alignment shortens driver sight-lines and requires additional maneuvering, resulting in lower speeds.

Chicanes are also a good way to add attractive landscaping and stormwater management elements to a street.

APPROPRIATE APPLICATIONS:

- On streets where speed control is desired.
- On streets wide enough to accommodate the chicane.
- In some cases, chicanes can be useful on streets with stormwater drainage issues.

INSTALL CHICANES ON:

AVONDALE DR.

Woodside Dr. to Westdale Dr.

ORMANDY DR.

Woodside Dr. to Westdale Dr.

WOODSIDE DR.

College Dr. to Country Club Dr



The landscaping in this chicane in Austin, TX, is well-incorporated into the surrounding neighborhood landscape. source: LADOTbikeblog

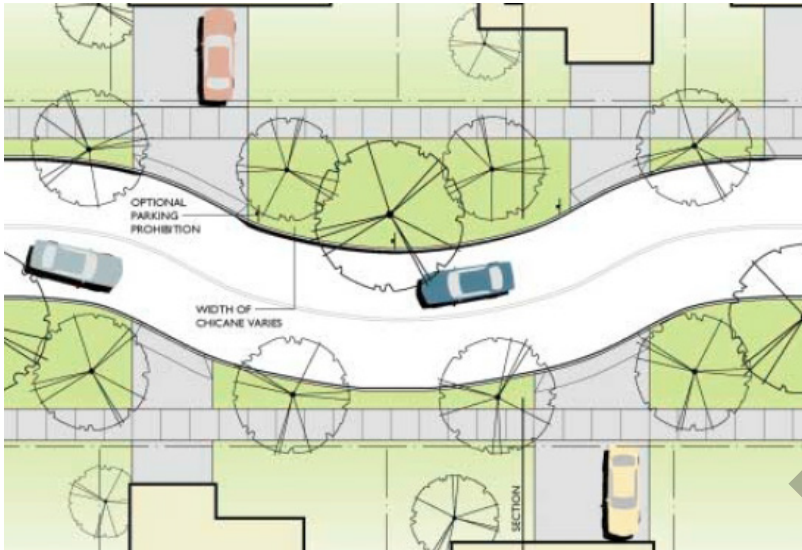


This chicane was designed to be part of a new development, though it is also feasible to retrofit a chicane. source: lgam.info

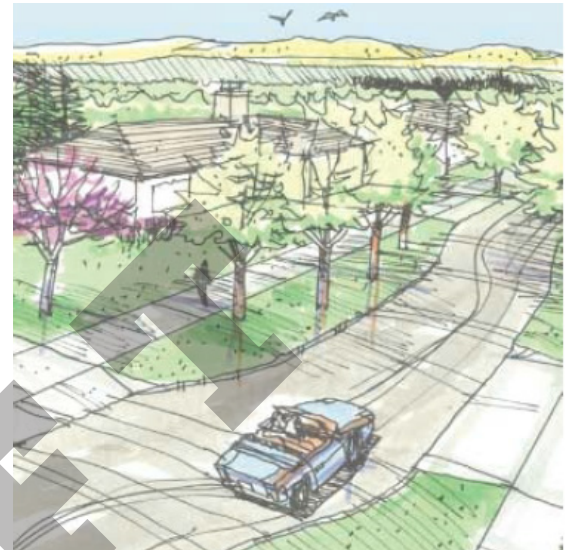


Temporary chicanes were installed on Richland Ave. as part of the Street Smart demonstration weekend. source: CPEX

TYPICAL DESIGN:



source: DPW's Residential Traffic Calming Manual



source: DPW's Residential Traffic Calming Manual

DESIGN GUIDELINES:

- Chicanes shall be designed to have the appropriate horizontal curve alignment. This may vary, so an engineering study is necessary.
- Whenever applicable, chicanes should be designed to accommodate stormwater runoff through slotted curbs and a sunken planting area.
- Chicanes should be planted with plants that treat stormwater, as well as trees. However, plantings shall not interfere with driver sight-lines.

8 | Extended medians

IMPROVEMENT LOCATION:



INSTALL EXTENDED MEDIANS AT:

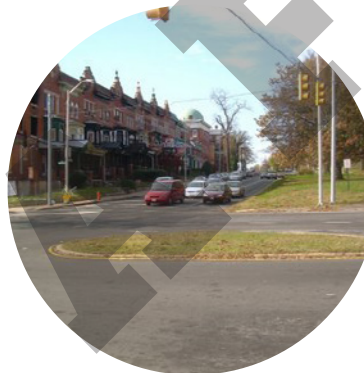
GOVERNMENT ST. AT STEELE BLVD.

OVERVIEW:

In addition to providing refuge for bikes and pedestrians, extended medians help calm traffic by eliminating left turns and through traffic. When used appropriately, extended medians can help discourage neighborhood cut-through traffic.

APPROPRIATE APPLICATIONS:

- At intersections suitable for vehicles to make right turns only
- At intersections where a bike lane or cycle track crosses a heavily traveled road
- On streets wide enough to accommodate a median with bike and pedestrian refuge



This example located in Baltimore, MD, shows an extended median that incorporates a U-turn area. source: NACTO

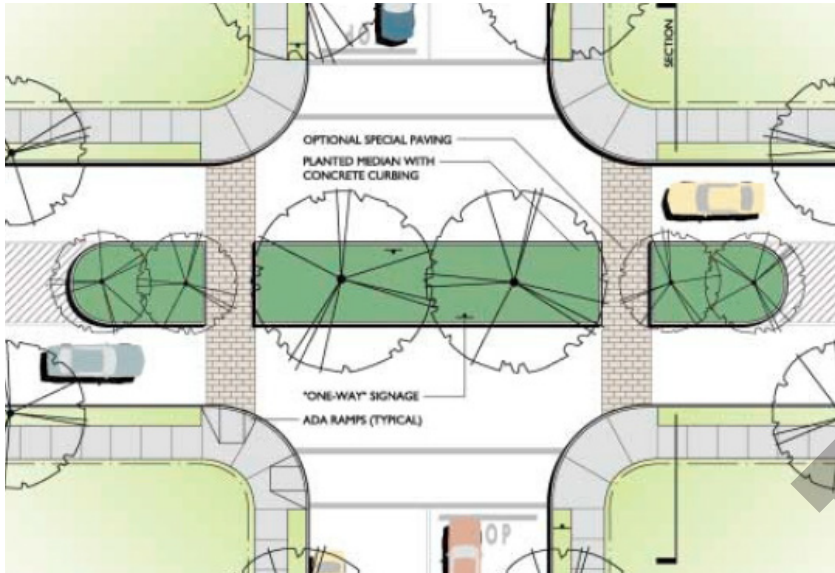


Bike refuges in medians provide bicyclists with a safe mid block crossing point. This example is located in Bellevue, WA. source: NACTO

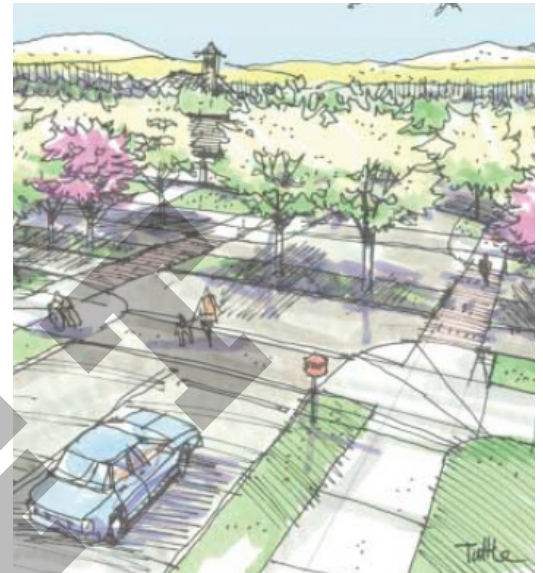


Similar to providing bike refuge, extended medians can provide the same service to pedestrians, while incorporating attractive landscaping. source: NACTO

TYPICAL DESIGN:



source: DPW's Residential Traffic Calming Manual



source: DPW's Residential Traffic Calming Manual

DESIGN GUIDELINES:

- Median shall extended beyond cross street to eliminate right turns and cross traffic for vehicles.
- While eliminating some movements for vehicles, extended medians should accommodate the safe and easy crossing of bicyclists and pedestrians.
- Wherever possible, medians shall be designed to capture stormwater runoff by use of slotted curbs and sunken planting area.
- Planting areas should be planted with material that filters and treats stormwater runoff.
- Plantings should not be placed so that they interrupt the sight-line of crossing bicyclists and pedestrians, or that of oncoming vehicles.

Implementation Matrix

Location	Traffic Calming Project	Bike/Pedestrian Project	Partners	Funding Sources	Budget	Civic Association	In Process
						BT CH WP VP	
Low Cost/Effort							
Acadian at Bawell, Hundred Oaks, Broussard, Claycut	high visibility crosswalk (L1)	crosswalk		STP, LRSP, LOC		● ● ● ●	
Aldrich	-	shared lanes, sidewalk		RTP, LOC			●
Balis	-	shared lanes		LOC			●
Bawell	appropriately spaced stop signs (L1)	-		LOC			●
Bawell at College	high visibility crosswalk (L1)	crosswalk		STP, LRSP, LOC			●
Broussard (Acadian to Country Club)	lane narrowing (L1)	dedicated bike lane		RTP, TAP, STP, LOC		●	
Capital Heights	appropriately spaced stop signs (L1)	-		LOC		●	
Capital Heights (Acadian to Jefferson)	lane narrowing (L1)	contraflow lane		RTP, SRTS, LOC		●	
Capital Heights at Foster and Jefferson	-	traffic signal synchronization		LRSP, LOC		●	
Capital Heights at Jefferson	high visibility crosswalk (L1)	crosswalk		LRSP, LOC		●	
Claycut	appropriately spaced stop signs (L1)	-		STP, LOC		●	
College at I-10	high visibility crosswalk (L1)	crosswalk		LRSP, LOC			●
Country Club (Broussard to trail)	-	shared lanes		LOC		●	
Country Club (Claycut to Broussard/Westdale)	lane narrowing (L1)	buffered bike lane		TAP, LOC		●	
Edison (Government. to North)	lane narrowing (L1)	dedicated bike lane		RTP, TAP, LOC		●	
Glenmore	lane narrowing (L1)	buffered bike lane		RTP, SRTS, LOC		●	
Glenmore (Claycut to Government)	-	shared lanes		RTP, SRTS, LOC		●	
Government at Edison	high visibility crosswalk (L1)	crosswalk		LRSP, LOC		●	
Hundred Oaks	appropriately spaced stop signs (L1)	-		LOC		●	
Hundred Oaks	lane narrowing (L1)	buffered bike lane		RTP, STRS, LOC		●	
Lovers	lane narrowing (L1)	buffered bike lane		TAP, LOC		●	
Moore (Claycut to Government)	-	shared lanes		LOC		●	
Moore at Claycut (option 1)	high visibility crosswalk (L1)	crosswalk		LRSP, LOC		●	
Moore pedestrian bridge	-	remove bollards/trim vegetation		LOC		●	
Nairn (Wells to Perkins)	-	shared lanes or bike lane		RTP, LOC		●	
Nairn at Bawell	high visibility crosswalk (L1)	crosswalk		LRSP, LOC		●	
Overall - non-signalized intersections	-	bike lane transitions		LOC		●	
Overall - subdivision non-stripped streets	reduced speed limit to 25 (L1)	-		LOC		●	●
Overall - throughout district	high visibility street signs (L1)	-		LOC		●	●
Overall - throughout district	-	signature/road marking standards		LOC		●	
Overall - signalized intersections	high visibility crosswalk (L1)	bike transitions and crosswalks		LRSP, LOC		●	●
Rapides (Capital Heights to Government)	-	shared lanes		LOC		●	
Steele (Capital Heights to Government)	-	shared lanes		LOC		●	
Steele (in Bernard Terrace)	lane narrowing (L1)	buffered bike lane		TAP, LOC		●	
Wells	-	shared lanes		LOC			●
Westmoreland (Government to North)	lane narrowing (L1)	dedicated bike lane		RTP, LOC			
Woodside (Country Club to Glenmore)	lane narrowing (L1)	dedicated bike lane		RTP, TAP, LOC		●	
Shared use of golf paths in off hours	-	sidewalk		n/a			●

Medium Cost/Effort						
Avondale	choker (L2)	-	raised intersection	LOC		
Broussard at Country Club	raised intersection (L2)	-	raised intersection	TAP, LRSP, STP, LOC		
East	chicanes with one-way (L2)	-	-	LOC		
Glenmore at Claycut	-	-	intersection improvements	LRSP, LOC		
Hundred Oaks at Steele, Richland, Longwood	speed table (L2)	-	crosswalk	LOC		
Ingleside	choker (L2)	-	-	LOC		
Longwood	choker (L2)	-	-	LOC		
Moore at Claycut (option 2)	raised crosswalk (L2)	-	crosswalk	LRSP, LOC		
Ormandy	choker (L2)	-	-	LOC		
Richland	choker (L2)	-	-	LOC		
Richland	chicanes with one-way (L2)	-	-	LOC		
Steele	choker (L2)	-	-	LOC		
Steele at Claycut	raised crosswalk (L2)	-	crosswalk	LRSP, LOC		
Trail at Ormandy and Avondale (option 2)	raised crosswalk (L2)	-	crosswalk	LRSP, LOC		
Wells (Wells to Bawell)	-	-	sidewalk	LRSP, LOC		
West	chicanes with one-way (L2)	-	-	LOC		
Woodside	chicanes (L2)	-	-	LOC		
High Cost/Effort						
Acadian (Bawell to BRCYPA)	-	-	sidewalk	LRSP, LOC, SRTS		
Avondale and Ormandy (trail to Westdale)	-	-	sidewalk	LRSP, LOC		
Broussard (Acadian to Country Club)	-	-	sidewalk	STP, LRSP, LOC		
Capital Heights at Jefferson Hwy.	-	-	HAWK beacon and crosswalk	LRSP, LOC		
Capital Hts. at Acadian	extended median (L3)	-	bike/ped refuge	TAP, LRSP, LOC		
Claycut (Acadian to Foster)	-	-	sidewalk	LRSP, LOC		
Government at Edison	extended median (L3)	-	bike/ped refuge	TAP, LRSP, LOC		
Government at Glenmore	extended median (L3)	-	bike/ped refuge	TAP, LRSP, LOC		
Government at Steele	extended median (L3)	-	bike/ped refuge	TAP, LRSP, LOC		
Trail	-	-	multi-use trail improvements	RTP, TAP, LOC		
Webb Park (Claycut, Country Club, Westdale)	-	-	sidewalk	LRSP, LOC		
Woodside (Avondale to Glenmore)	-	-	sidewalk	LRSP, LOC		
LEGEND:						
RTP=Recreational Trails Program	LRSP=Local Road Safety Program	BT=Bernard Terrace	CH=Capital Heights			
TAP=Transportation Alternatives Program	SRTS=Safe Routes to School	WP=Webb Park	VP=Valley Park			
STP=Surface Transportation Program	LOC=Local Operational and Capital					

References

THE DESIGN GUIDELINES IN THIS DOCUMENT WERE DEVELOPED USING THE FOLLOWING RESOURCES:

- Dallas Complete Streets Design Manual; City of Dallas
- Guide for the Development of Bicycle Facilities; American Association of State Highway and Transportation Officials (AASHTO)
- Jennifer Ruley, PE, Active Transportation Engineer/Urban Planning Specialist; Louisiana Public Health Institute
- Manual on Uniform Traffic Control Devices (MUTCD); Federal Highway Administration
- Residential Traffic Calming Manual; East Baton Rouge Department of Public Works
- Street Design Guide; National Association of City Traffic Officials (NACTO)
- Urban Bikeway Design Guide; National Association of City Traffic Officials (NACTO)

DRAFT

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STREET SMART

DRAFT