Pedestrian + Bicycle Infrastructure Strategy

Roeland Park, Kansas | September 25, 2017

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Introduction

This Pedestrian & Bicycle Infrastrucutre Strategy is a program of pedestrian and bicycle infrastructure improvements in the City of Roeland Park, KS. It presents a deliberate and phased approach to building a safer and more interconnected network of pedestrian and bicycle facilities.

This report presents a blueprint for a more complete sidewalk network in Roeland Park, and provides an important update to the city's Sidewalk Program. The priority projects identified in this strategy focus on creating a network of sidewalks that are safe, comfortable, continuous, and that connect important destinations.

This strategy also identifies a priority bicycle network that synthesizes several previous planning efforts and identifies specific infrastructure improvements for different segments of the network.

Sidewalk and bicycle networks depend on safe crossings at intersections. This strategy recommends improvements to certain key intersections around the City to remove barriers to connectivity and enhance safety in locations where conflicts with automobiles may occur.

The priorities identified in this report build on past planning efforts while providing a new strategic approach. They outline a path to achieve Roeland Park's goals for walkability and connectivity, expressed in the City's 2012 Comprehensive Plan, and 2016 committee report on bicycle and pedestrian safety.

In the implementation section of this report, recommendations are organized into prioritized project segments. Existing and potential funding sources are identified. Finally, a "Quick Build Guide" describes a number of inexpensive and interim treatments for improving conditions on an accelerated timeline.

This document was produced for the City of Roeland Park, KS by BikeWalkKC, and made possible with the support of the LiveWell Johnson County program and the Johnson County Department of Health and Environment.

Existing Conditions

There are thirty-seven miles of streets within the boundaries of Roeland Park. Approximately ten miles of those streets (27%) are missing sidewalks on either side. All arterial and collector streets have sidewalks, with the exception of Roe Boulevard north of 48th Street and Buena Vista Street between Shawnee Mission Parkway and 53rd Street (see Figure 1). Most areas between Roe Boulevard and Neosho Avenue have sidewalks. The Roe Highlands subdivsion, between the community Center and 51st Street also has sidewalks on every street.

Elsewhere in Roeland Park, sidewalks are less common. Sidewalks have been constructed along "through" streets that provide more continuous paths between destinations, but sidewalks on many side streets are missing. These gaps make it difficult for residents to reach many destinations via a direct and convenient route.

Marked crossings exist mostly in the areas of the Roeland Park Shopping Center and Roesland Elementary School.

Marked crossings exist mostly around and between the Roeland Park Shopping Center and Roesland Elementary School. Most crosswalks are in the continental style, which is highly visible to motorists. Some crosswalks are marked in the parallel-line style, which is much less visible. Lack of marked crossings reduces the comfort and safety of pedestrians, especially in high-traffic and high-speed corridors.

While several projects are planned and budgeted, including a shared use path on Roe Boulevard, there are currently no dedicated bicycle facilities in Roeland Park. Share the road signs and on-street painted sharrows exist in some locations.

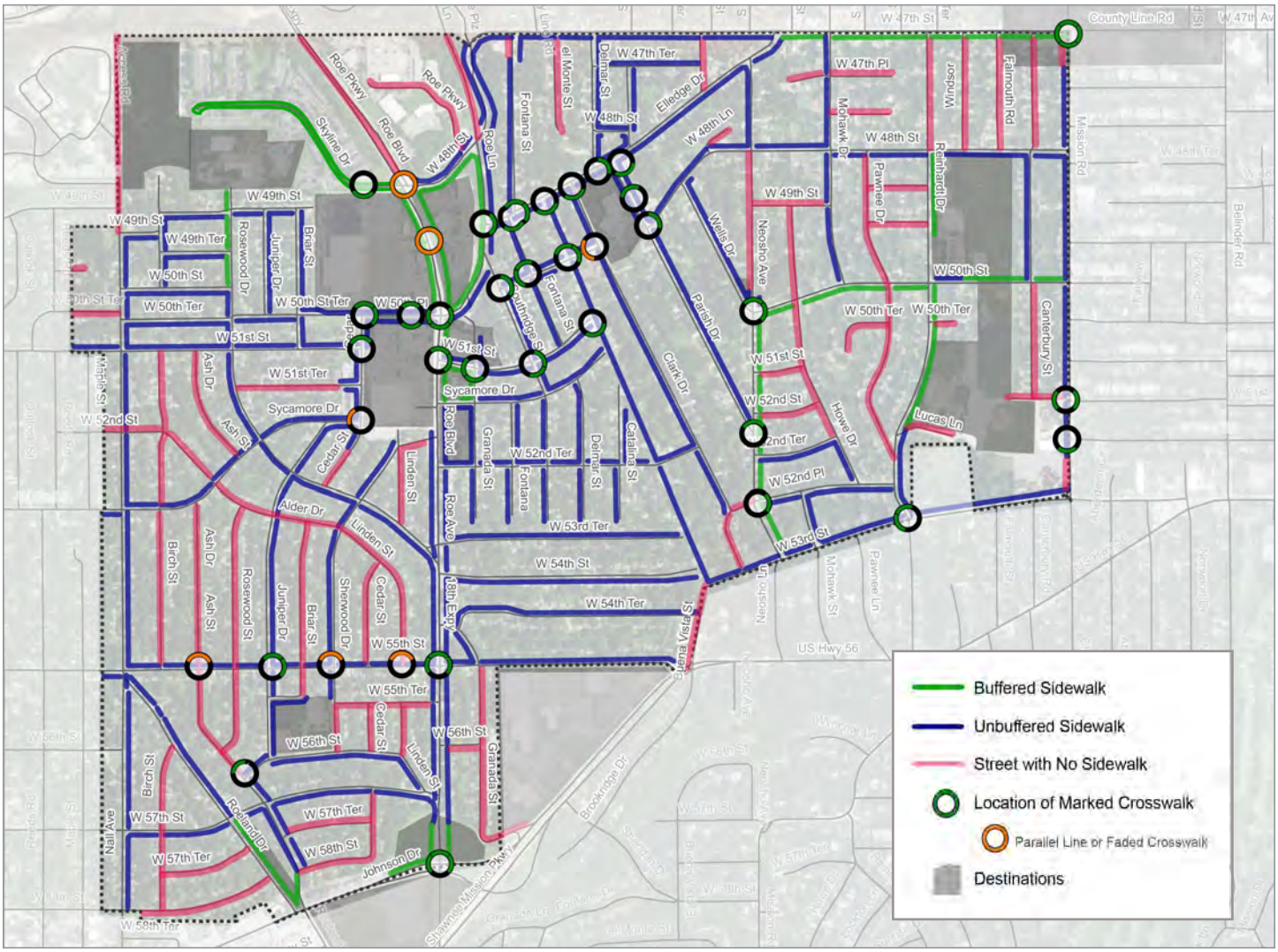


Figure 1 - Existing Sidewalks and Marked Crossings

Previous Plans

Over the past decade, several planning efforts have proposed approaches for implementing pedestrian and bicycle infrastructure in Roeland Park. These proposals helped shape the recommendations made in this report, but there is significant variation in the recommendations of the various plans. One of the goals of this Pedestrian and Bicycle Infrastructure Strategy is to synthesize all of these recommendations into a single, coherent strategy for infrastructure improvements that responds to the motivations and aspirations of each of the prior efforts. Figure 2 maps the routes for trails and bicycle facilities that were recommended in previous plans.

2010 & 2016 Sidewalk Program:
The most comprehensive plan for sidewalk improvements in Roeland Park is the city's Sidewalk Program, first adopted in 2010 and updated in 2016. The program envisions sidewalks built on both sides of every city street and lays out several phases for sidewalk extensions. The highest priority phases would fill in gaps in the existing sidewalk network, on streets currently lacking sidewalk. Lower priority phases would see a second sidewalk added to streets that already have sidewalk on one side.

The program also identifies routes for bike trails across the city, though it doesn't specify precise alignment or other design details. The trails would generally follow two east-west routes, both extending from near Bishop Miege High School in the east. One would serve Roesland Elementary and Roeland Park Shopping Center before splitting into three routes, two leading into the City of Mission, and one extending to Roeland Park Community Center. The second major route would serve the southern half of the city, splitting into two routes at R Park.

Pedestrian & Bicycle Safety Ad-Hoc Committee:
The Roeland Park Pedestrian and Bicycle Safety Ad-Hoc Committee was formally created by the City Council on July 23, 2015 with a one-year mission to look at the current state of transportation in and around the City as it relates to pedestrian conditions, ADA accessibility, bicycling, and transit accessibility. The Committee released a report making a number of recommendations regarding these modes. Among them was a recommendation for bicycle facilities to link the proposed bicycle trails from the 2016 Sidewalk Program. These would primarily consist of north-south on-street connections between the previously proposed trail routes.

2012 Roeland Park Comprehensive Plan:
This plan calls for a community trail network. The proposed network consists of two east-west and three north-south segments that, when connected would essentially form two loops. Few connections to neighboring cities are explicitly laid out, in contrast to the 2016 Sidewalk Program.

Greater Kansas City Regional Bikeway Plan:
Adopted in 2015, this plan envisions a regional network of bicycle facilities that support active transportation. A segment of bikeway is proposed through Roeland Park. It would begin on Roe Lane at the county line, extend west on 50th Terrace, and shift to 51st Street. At Nall Avenue, part of it would continue into Mission, while another segment would extend south on Nall Avenue.

Rosedale Master Plan:
This plan set out a vision for the future of the Rosedale neighborhood in Kansas City, Kansas. It proposed new bicycle infrastructure serving the neighborhood, including signed bike routes on 47th Street and on Elledge Drive, leading to Roe Avenue.

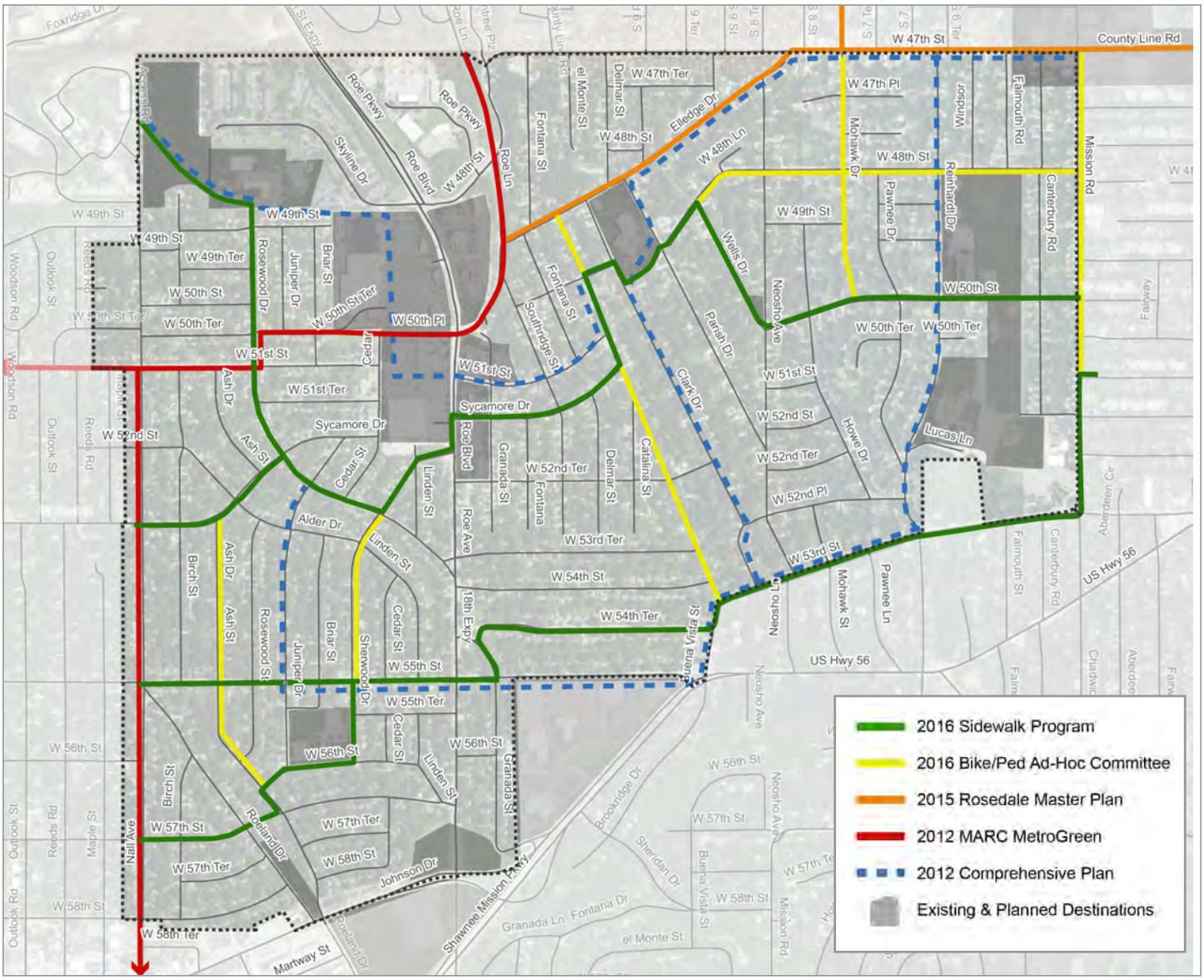


Figure 2 - Previous Proposals for Trails & Bicycle Infrastructure

Infrastructure Strategy

The strategy for improving infrastructure for pedestrians and cyclists in Roeland Park focuses on connecting residents to the city's important destinations with safe, comfortable, direct routes for walking and cycling. The recommended infrastructure improvements are intended to support both recreation and transportation by foot or bicycle.

This strategy has three parts. The first part is the **Priority Sidewalk Network**, which identifies important street segments for construction of future sidewalks within the City. Next is a **Priority Bicycle Network**, which describes the type and location of bicycle facilities that together would provide safe and comfortable cycling conditions throughout Roeland Park. Recommendations for **Priority Intersections** outline a methodology for making improvements to intersections that would enhance safety for those walking and biking.

Key Principles

Previous planning efforts identify improvements to pedestrian and bicycle infrastructure in Roeland Park, but there is not consensus about which streets should be improved or about which improvements are most urgent. The following principles attempt to establish a strategic framework for prioritizing projects that brings together the goals and aspirations of previous efforts. These principles guide all of the recommendations in this Pedestrian and Bicycle Infrastructure Strategy:

Safe and Comfortable

Route and facility choices should ensure that users of all ages and abilities can safely travel, and support conditions that make it inviting and comfortable to do so.

Direct and Continuous

Routes should provide a direct and efficient path to destinations, while also being located so that all areas of the city have convenient access to high-quality facilities nearby.

Connecting Important Destinations

Pedestrians and cyclists want to travel to the same destinations as motorists. Improvements should be prioritized to connect people to the destinations they want to visit.

Destinations

Connecting destinations is one of the key principles guiding the infrastructure recommendations in this report. The destinations in map below are derived primarily from the 2012 Comprehensive Plan, which described a concept of Roeland Park as a "village" with a number of "centers" where services and destinations are located. The centers include a "Neighborhood Center" at 47th Street and Mission Road and a "Town Center," which includes the Roeland Park Shopping Center, City Hall, and the surrounding area. Two other centers are located in and around potential future development at the former Mission Gateway site. Figure 3 shows the centers presented in the Village concept, along with a number of other important destinations, including schools and parks, that would likely attract pedestrian and cyclists.

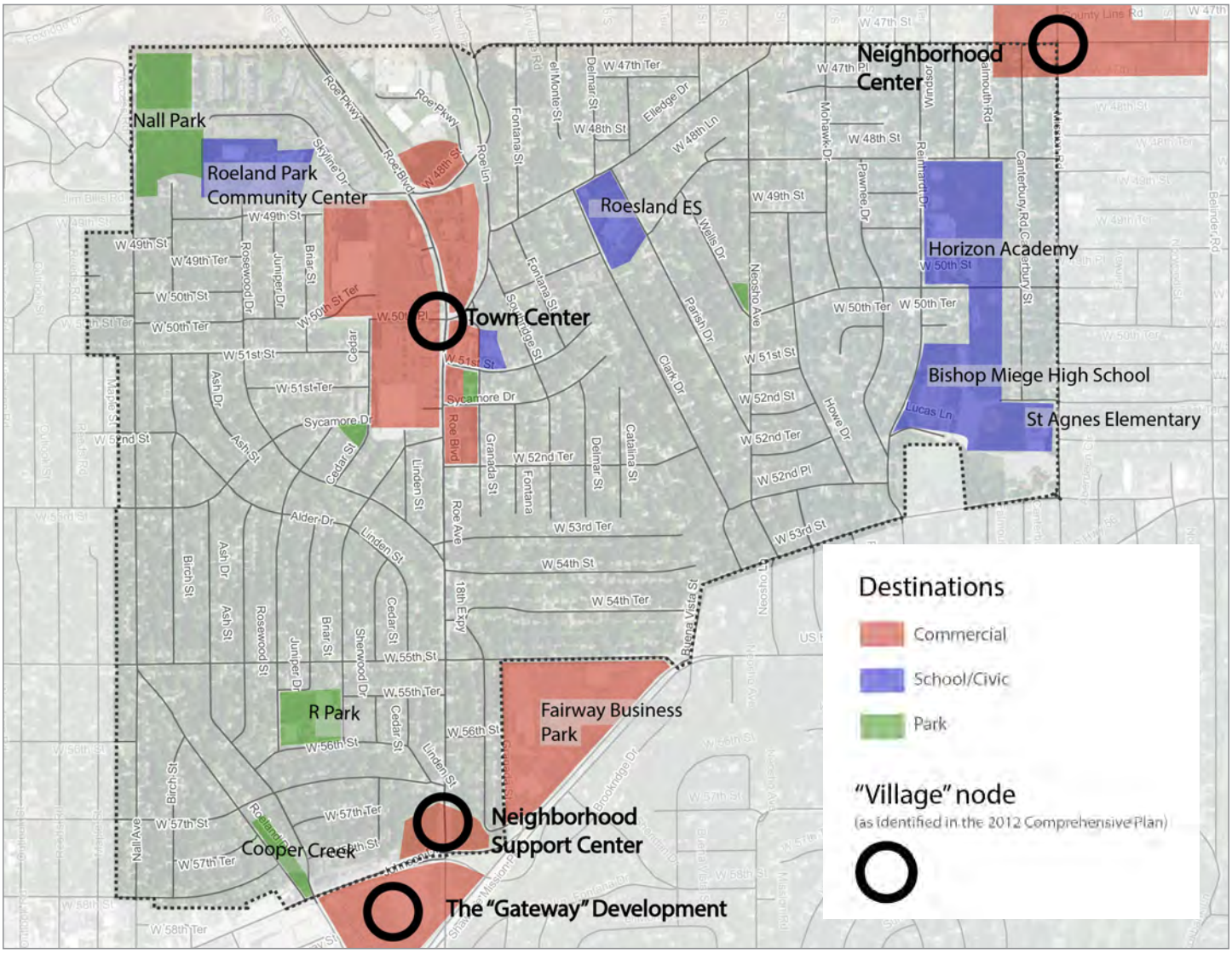


Figure 3 - Roeland Park Destinations

Priority Sidewalk Network

The Priority Sidewalk Network is an interconnected citywide network of pedestrian routes that connect to all major destinations in the community. This Priority Sidewalk Network identifies the best routes for direct and comfortable connections to places that people want to go. Many of these routes have sidewalks today, but there are also several important gaps where no sidewalks exist. The Priority Sidewalk Network also identifies several off-street segments that provide important connectivity between areas that do not have direct and convenient connections along the existing street nework.

Routes on the priority network were identified with the following criteria:

- The priority network connects identified destinations to each other and to as many Roeland Park residents as possible.
- The network supports a scenario in which a resident would not walk more than a block or two to reach quality pedestrian facilities, and would not have to walk along an arterial or collector street that did not have comfortable facilities.
- Recognizing that Roeland Park has a sometimes-inconsistent street grid, routes are identified to be as direct and continuous as possible.
- Routes have been designed to incorporate safe crossings at major barriers, such as Roe Boulevard.

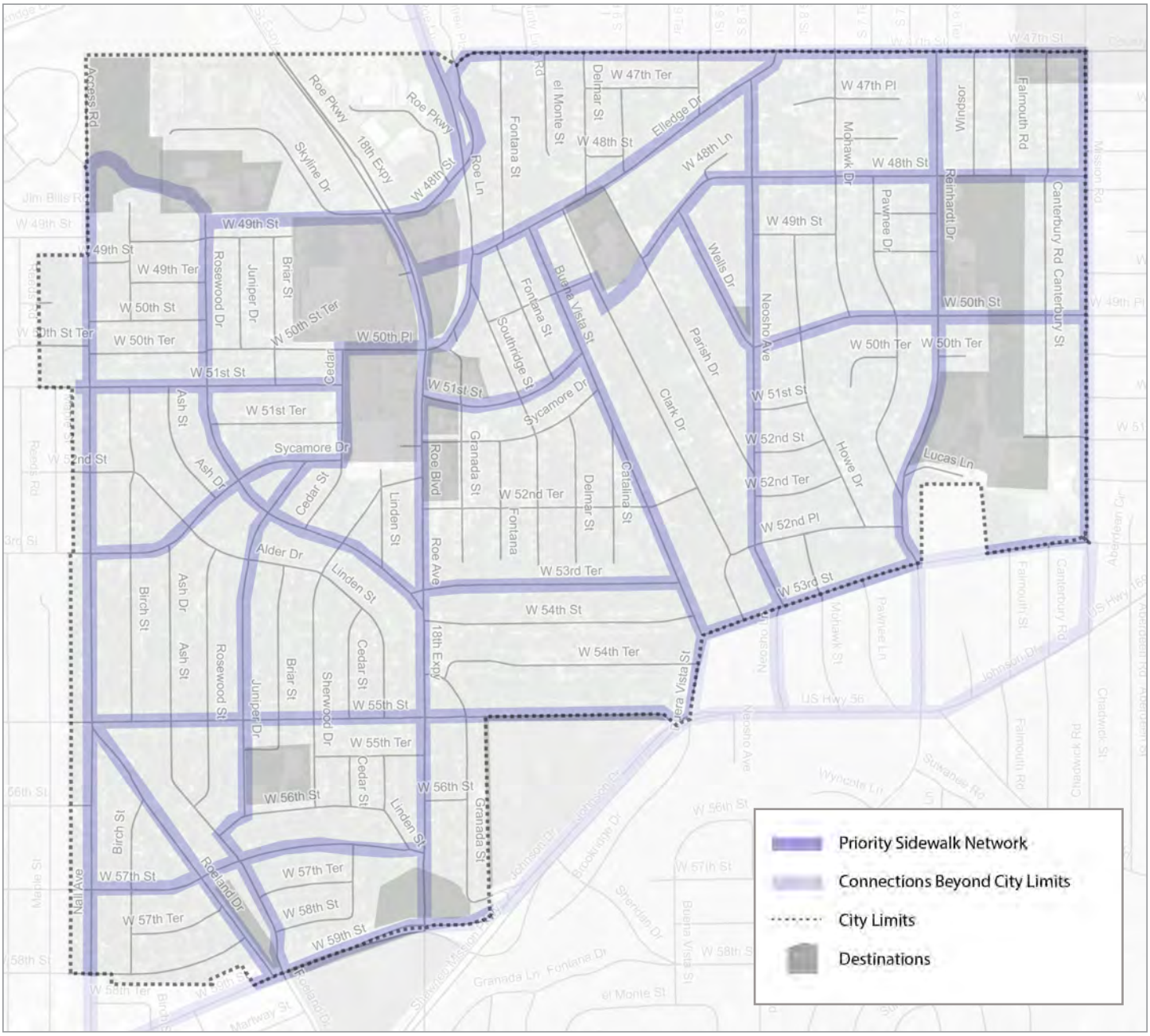
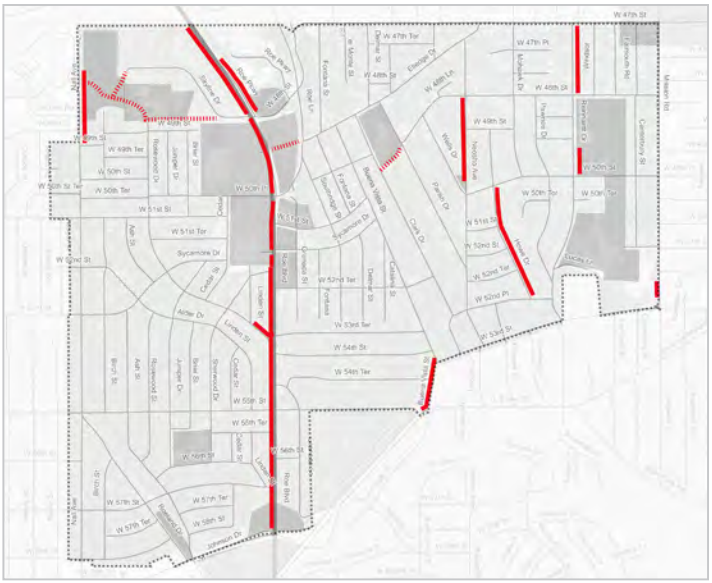


Figure 4 - Priority Sidewalk Network

Proposed Improvements

First Priority:
Missing Sidewalks on Priority Network Streets
Most of the streets on the Priority Sidewalk Network already have sidewalks, but there are some gaps. Because these streets are the most important for creating a safe, comfortable and interconnected network, they are identified as the first priority for improvements. Roeland Park is currently planning and designing a shared use path along Roe Avenue. Because this path would represent a major upgrade in pedestrian facilities along a key arterial, and because improvements would also help to address the barrier Roe Avenue creates for pedestrians travelling east and west, Roe Avenue improvements are also shown as a top priority.



Second Priority:
Missing Sidewalks on Reconstructed Streets
The City of Roeland Park has a street mill and overlay program (funded in part by federal Community Development Block Grant funds) for streets that have been determined to be in poor condition and that require structural repairs. Because street reconstruction projects are already modifying the existing roadway, they are convenient opportunities to add sidewalks where they are missing today. Adding sidewalks during reconstruction could simplify the design process and require fewer City resources that in the sidewalk is constructed separately.

Third Priority:
Other Missing Sidewalks
There are several streets that are not on the Priority Sidewalk Network and not planned for reconstruction, but that are still missing sidewalks of any kind. Construction of sidewalks on at least one side of these streets will complete the goal of providing sidewalks on all public streets in Roeland Park.

Second Sidewalks

Even the very best pedestrian accommodations can't serve Roeland Park residents if they have no way to get to them. Sometimes the biggest barrier is right outside a resident's front door. Having sidewalks on both sides of the street enhances the safety and comfort of pedestrians, and removes barriers at the very beginning and and end of a walk. In the future, sidewalk could be added to the second side of city streets. Streets in the priority network should be prioritized for second sidewalks. Other streets could follow the initial phasing, with second sidewalk added as roads are reconstructed.

Off-Street Connections

In locations where the street grid is incomplete or especially circuitous, off-street pedestrian connections can make it much easier for Roeland Park residents to get to destinations. These off-street connections are included as part of the Priority Sidewalk Network and should be considered as high-priority projects in parallel with the City's on-street sidewalk program.

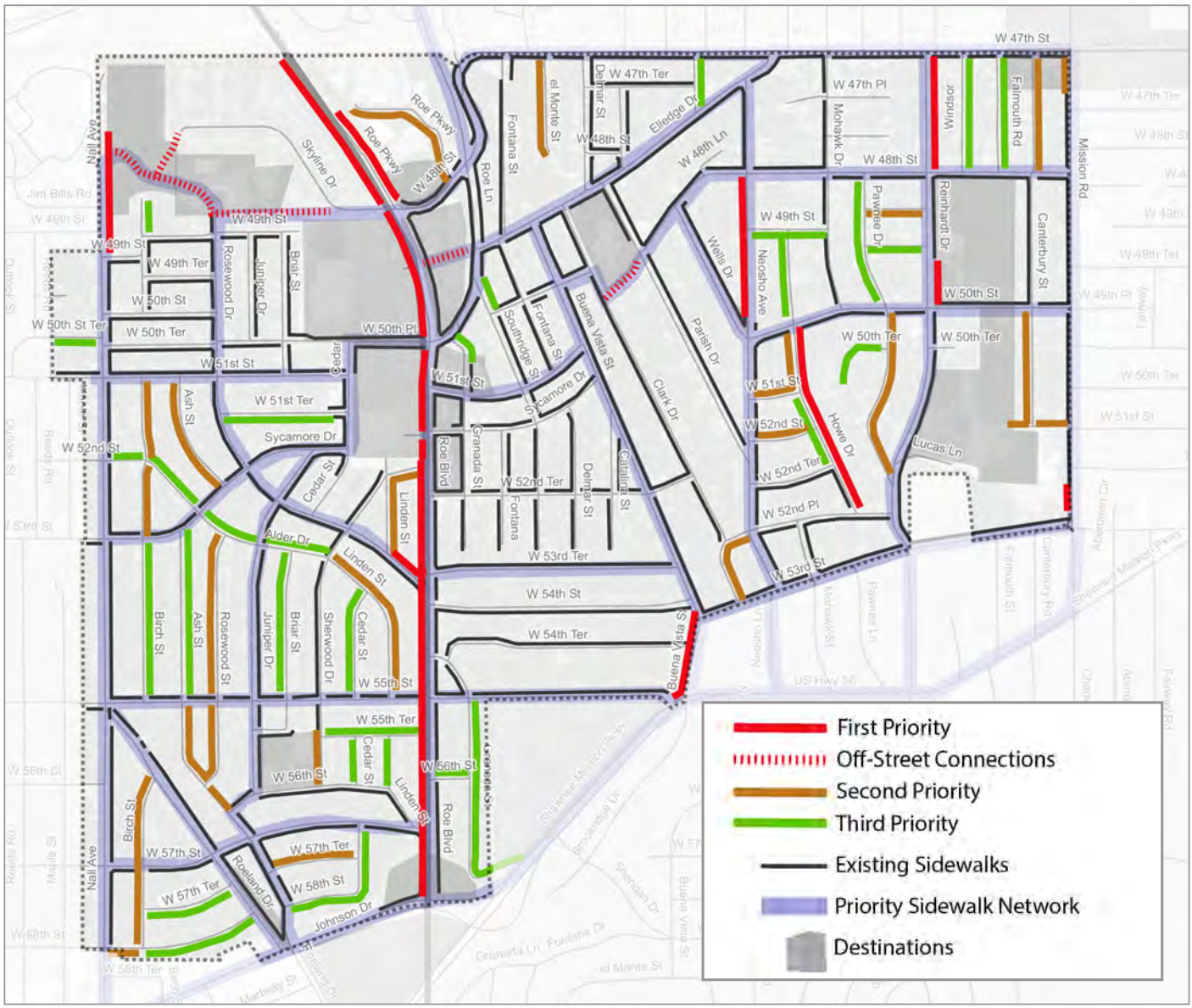


Figure 5 - Proposed Sidewalk Improvements

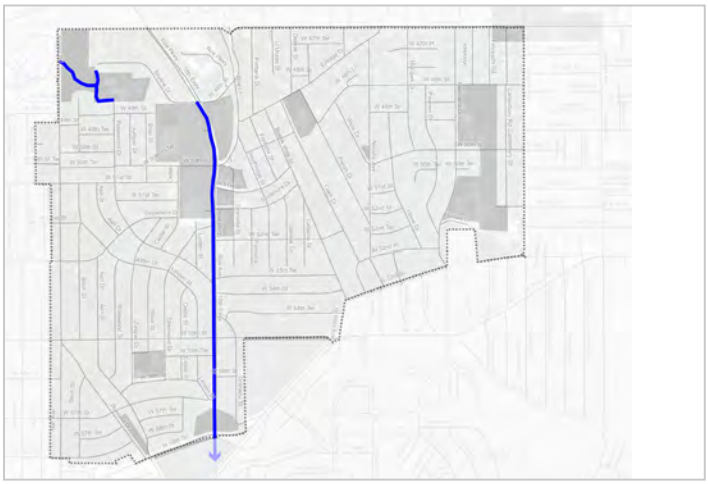
Priority Bicycle Network

Several recent plans have called for bicycle infrastructure in Roeland Park. Dedicated bicycle facilities do not yet exist in the city, but recent growth in cycling for recreation and commuting alike is increasing demand, as reflected in recent planning efforts. The Pedestrian and Bicycle Infrastructure Strategy includes a new proposal for cycling infrastructure. This proposal recommends a Priority Bicycle Network that supports recreation and commuting with a variety of facility types. This network serves travel both within Roeland Park and to destinations beyond the city limits.

Proposed Improvements

Bike Lanes

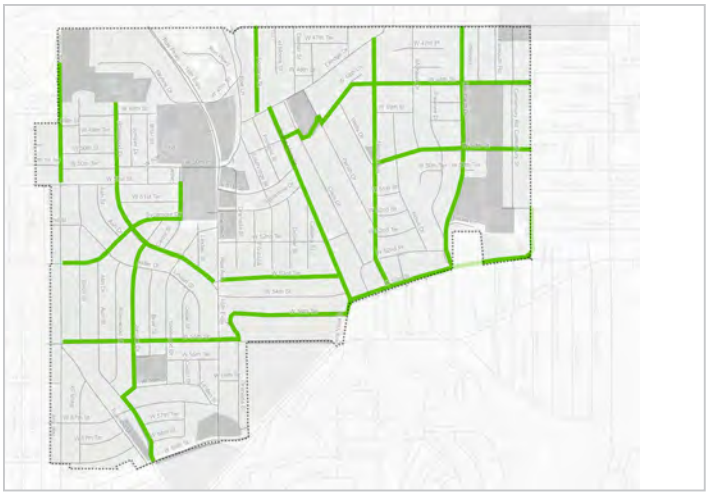
Bike Lanes are recommended for those streets on the Priority Bicycle network that have sufficient space between existing curbs for at least two ten-foot automobile lanes and two five-foot bicycle lanes. Specifically, that includes Roe Lane, Elledge Drive, 47th Street, and 51st Street between Buena Vista Street and Roe Avenue. Bicycle lanes are also recommended for regional bike routes identified on MARC's Regional Bikeway Plan. The Regional Bikeway Plan identifies portions of 50th Terrace, 51st Street and Nall Avenue as priority routes. In these locations, additional curb width or right-of-way may be necessary to accommodate dedicated bike lanes.

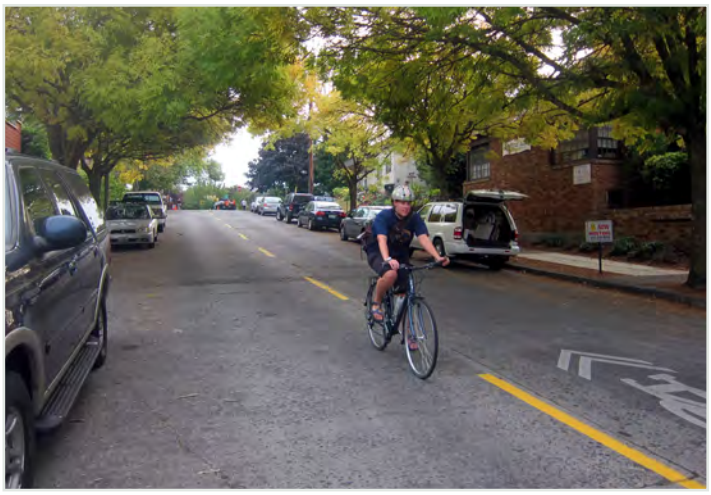


Source: Project for Public Spaces

Shared-Use Paths

Shared-use paths function like extra-wide sidewalks that provide enough space for bicyclists and pedestrians to safety interact. A shared-use path is recommended along Roe Avenue where design and engineering is currently underway for improvements to the entire street. Generally a shared use path should be ten to twelve feet wide to safely and accommodate pedestrians and cyclists together.





Source: reconnectrochester.org

Neighborhood Greenways

Most of the routes identified on the Priority Bicycle Network are too narrow to accommodate dedicated bike lanes in the width beween existing curbs. However, because these streets are generally residential in nature, with limited traffic and low speeds, they can still function as safe and comfortable connectors for cyclists. Many of the streets identified as part of the Priority Bicycle Network are also identified on the Priority Sidewalk Network. With minor improvements to traffic calming and wayfinding, these "Neighborhood Greenways" can perform as multifunction neighborhood amenities that benefit cyclists, pedestrians, and adjacent residents.

Neighborhood Greenways

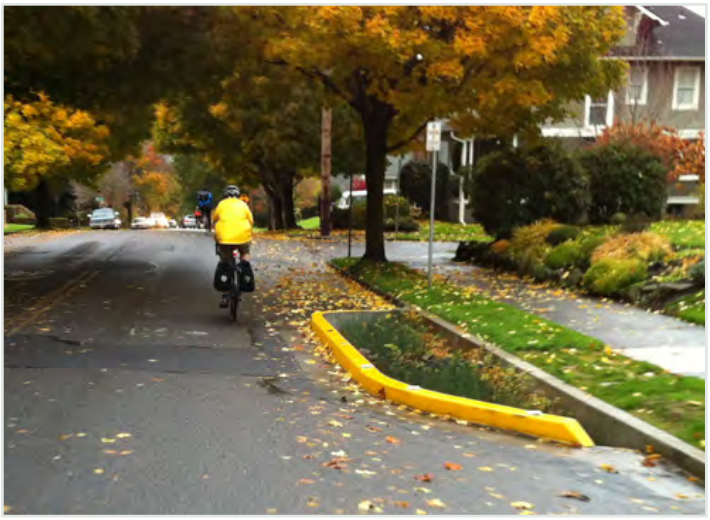
Sometimes called "Bicycle Boulevards," the Neighborhood Greenways identified in the Priority Bicycle Network are streets where conditions allow bicycle traffic to be safely mixed with automobiles. The National Association of City Transportation Officials defines Bicycle Boulevards as follows:

"Bicycle boulevards are streets with low motorized traffic volumes and speeds, designated and designed to give bicycle travel priority. Bicycle Boulevards use signs, pavement markings, and speed and volume management measures to discourage through trips by motor vehicles and create safe, convenient bicycle crossings of busy arterial streets."

The concept of a Neighborhood Greenway or Bicycle Boulevard is appealing in Roeland Park for several reasons. First, many of the streets that make convenient bike connections are not wide enough to incorporate dedicated bike lanes without the the cost and disruption of major construction. However, since these streets generally have few cars and low speed limits, it's possible for cyclists to comfortably mix with traffic. In most cases, the experience for cyclists on these routes would be enhanced by minor design modifications that slow down traffic and enhance safety.

Neighborhood Greenways are also appealing in Roeland Park because there is a great deal of overlap beween the Priority Bicycle and Sidewalk networks. That presents an opportunity to enhance priority streets for all users, and to incorporate design elements that increase the comfort and safety for cyclists in coordination with any adjacent sidewalk improvements. Done thoughtfully, relatively minor improvements including signage, pavement parkings, and traffic calming features could transform Roeland Park's Neighborhood Greenways into unique and marketable amenities that add value and beauty for those who live or travel on the street.

Source: bikemore.net


Source: nacto.org

Source: reconnectrochester.org

Prioritization

The Priority Bicycle Network identifies dedicated bike lanes for important routes that have the physical space to restripe the street without any modifications or expansion of the existing curbs. This means that these projects can be implemented for little more than the cost of paint and striping. Because of the ease of implementation, and because of the enhancement they could provide to cyclist comfort on important routes, these striped bike lanes are recommended as the first priority for implementation.

The shared-use path for Roe Avenue is recommended as the second priority for bicycle improvements. This route will provide a critical north-south spine for an interconnected bike network and link many community destinations. Improvements on Roe will also assist cyclists in crossing east-west, which today is a major barrier. Design and engineering for Roe Avenue improvements are already underway.

Neighborhood greenways are the third priority for bicycle improvements. Bicycle-friendly features can be incorporated on designated routes as part of the City's ongoing street reconstruction program. Intersection improvements, traffic calming, and other features benefit cyclists as well as pedestrians, and are straightforward to implement when intentionally designed to integrate with other improvements.

Bike lanes are identified for some streets on the Priority Bicycle Network that do not have room for dedicated facilities today. However, these streets represent important regional connections designated on MARC's Regional Bikeway Plan. Opportunities to incorporate dedicated bicycle facilities should be pursued when Roeland Park undertakes substantial street construction on these routes. In some cases, aditional right-of-way or easements may be necessary.

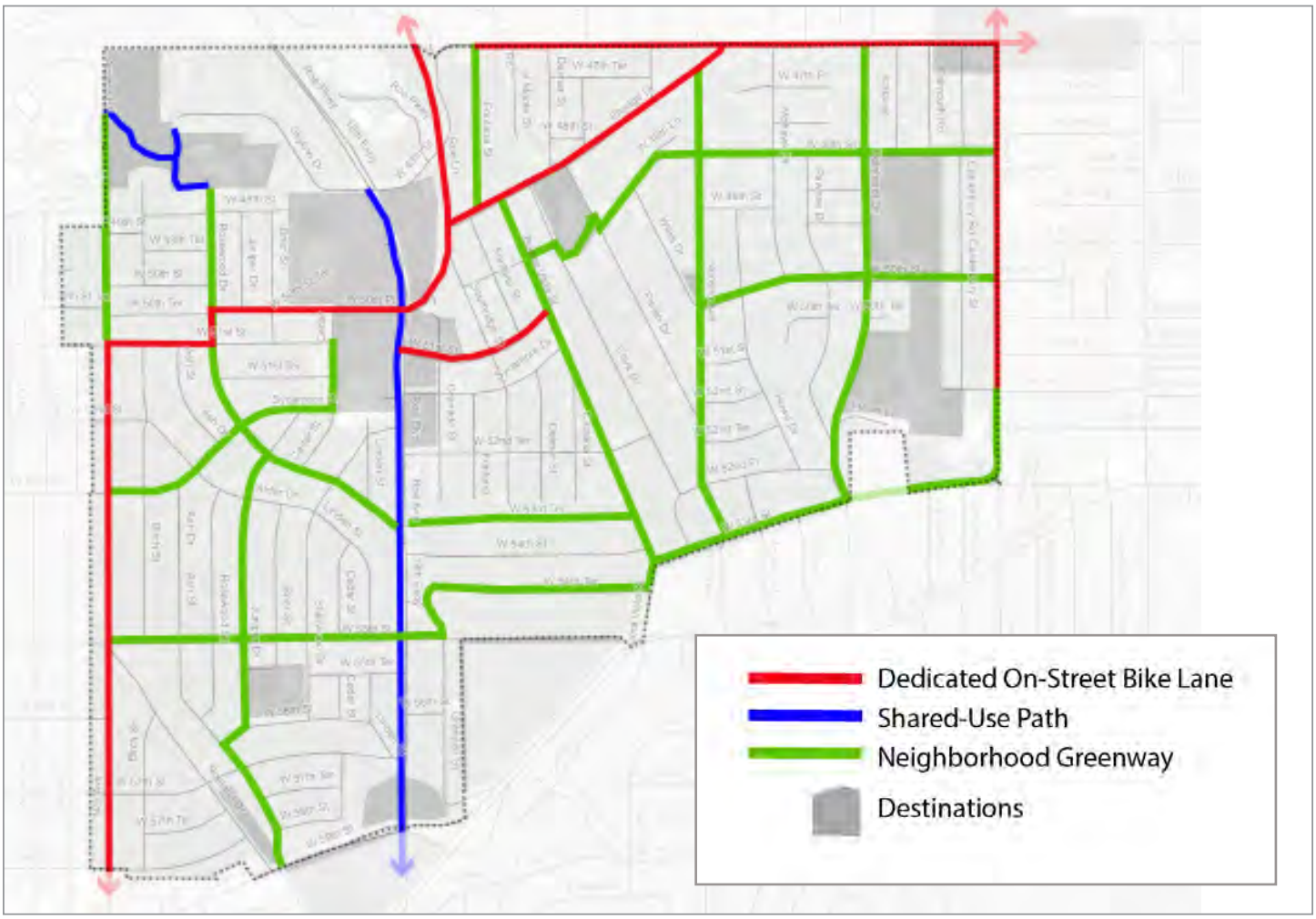


Figure 6 - Proposed Bicycle Network

Priority Intersections

Intersections form important links in a pedestrian and bicycle network. Intersections are where pedestrians and cyclists interact and share the same space with motorists. These conflict points are where collisions are most likely to occur and where walkers and bikers are most likely to feel uncomfortable. Even with quality sidewalks and bicycle facilities, inadequate crossing treatments and intersections can make travel challenging by foot or bike.

In addition to intersections where two or more public streets intersect, there are also conflict points at major driveways that require special attention. In these areas, where motorists mingle with pedestrians and cyclists, efforts should be made to minimize the number and width of driveways, and to provide clear signs and markings to make sure users of all transportation modes are aware and respectful of each other.

Safe Intersection Design

Features that can affect the quality of a pedestrian crossing include the presence of a marked crosswalk, intersection width (affecting crossing distance), curb radius, visibility of the crossing (due to vegetation, signs, or buildings), and the presence of curb ramps. The images to the right illustrate intersections with basic treatments that make them safer for pedestrians. Each has wide, visible crosswalks and American with Disabilities Act (ADA)-compliant curb ramps that aid mobility-impaired pedestrians. The image at top also displays a pedestrian refuge island that helps address the long crossing distance of the intersection and wide curb radius of the far corner.

Ped Bike Images

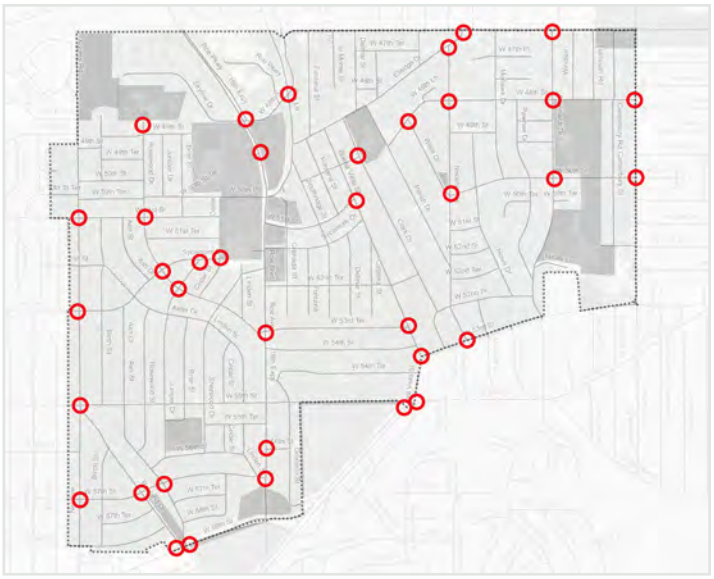
Ped Bike Images

Today, marked crossings exist mostly around and between the Roeland Park Shopping Center and Roesland Elementary School. Most crosswalks are in the continental style, which is highly visible to crossing motorists. Some crosswalks are marked in the parallel-line style, which is less visible. Most intersections in Roeland Park also have ADA-compliant curb ramps.

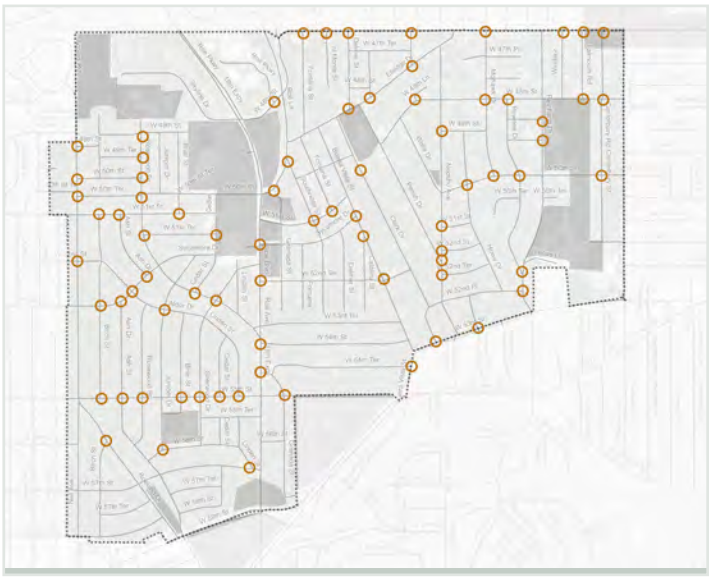
The intersections recommended for improvements generally have ADA curb ramps but lack adequate crosswalks. The maps on the following page and the table in the Implementation section list these intersections, as well as others that might be considered for additional improvements, such as bulbouts or signage. (The attached Quick Build Guide details some of these additional improvements, and how to implement them inexpensively or on an interim basis).

Proposed Improvements

First Priority:
Intersections of Priority Network Streets
The highest priority for intersection improvements are the locations where two different streets that are both on the Priority Sidewalk Network intersect each other. These are locations most likely to have pedestrian traffic, and often involve crossing streets with heavy traffic. Today, most intersections of priority network streets are missing crosswalks. The intersection of Rosewood Drive and 53rd Terrace is particularly important. This intersection is unsignalized and difficult to cross for pedestrians and cyclists today, but it represents a key east-west connector where priority routes converge. As Roe Avenue improvements are designed, signalization of this intersection should be considered.



Second Priority:
Intersections of Priority Streets with Other Streets
The second priority for intersection improvemetns are locations where priority network streets intersect other streets. These connections are important to create a continuous route along the priority network that is safe and comfortable. These intersections also provide access to the priority network from areas that require crossing the street.



Third Priority:
Other Intersections
When sidewalk improvements and bicycle facilities are constructed on streets that are not part of the priority network, there is an opportunity to incorporate intersection improvements as well. Together, sidewalk and infrastructure improvements can complete a comfortable pedestrian network on all public streets in Roeland Park.

Improving All Sides of the Intersection

Within each intersection, the highest priority improvements are safe and comfortable crossings for those segments that link pedestrian routes on either side of the intersection. This context informs which segments of the intersection are most important to improve, and how many segments require improvement. Recognizing that the sidewalk network will continue to develop, and that many people today live or work or visit destinations on the side of a street where there is no sidewalk, it should be a long-term goal to provide safe and comfortable accommodation on all corners and segments of intersections.

Street Alignments

In some locations, improvements beyond crosswalk markings and ADA compliant curb ramps are necessary because of the particular layout of the road. The angle of intersecting streets, the width of the street, the permitted turning movements, and other factors may create barriers for pedestrian and cyclist comfort and safety. The Quick Build Guide identifies a variety of techniques to improve the performance of intersections with tools that can be deployed quickly and for low cost.

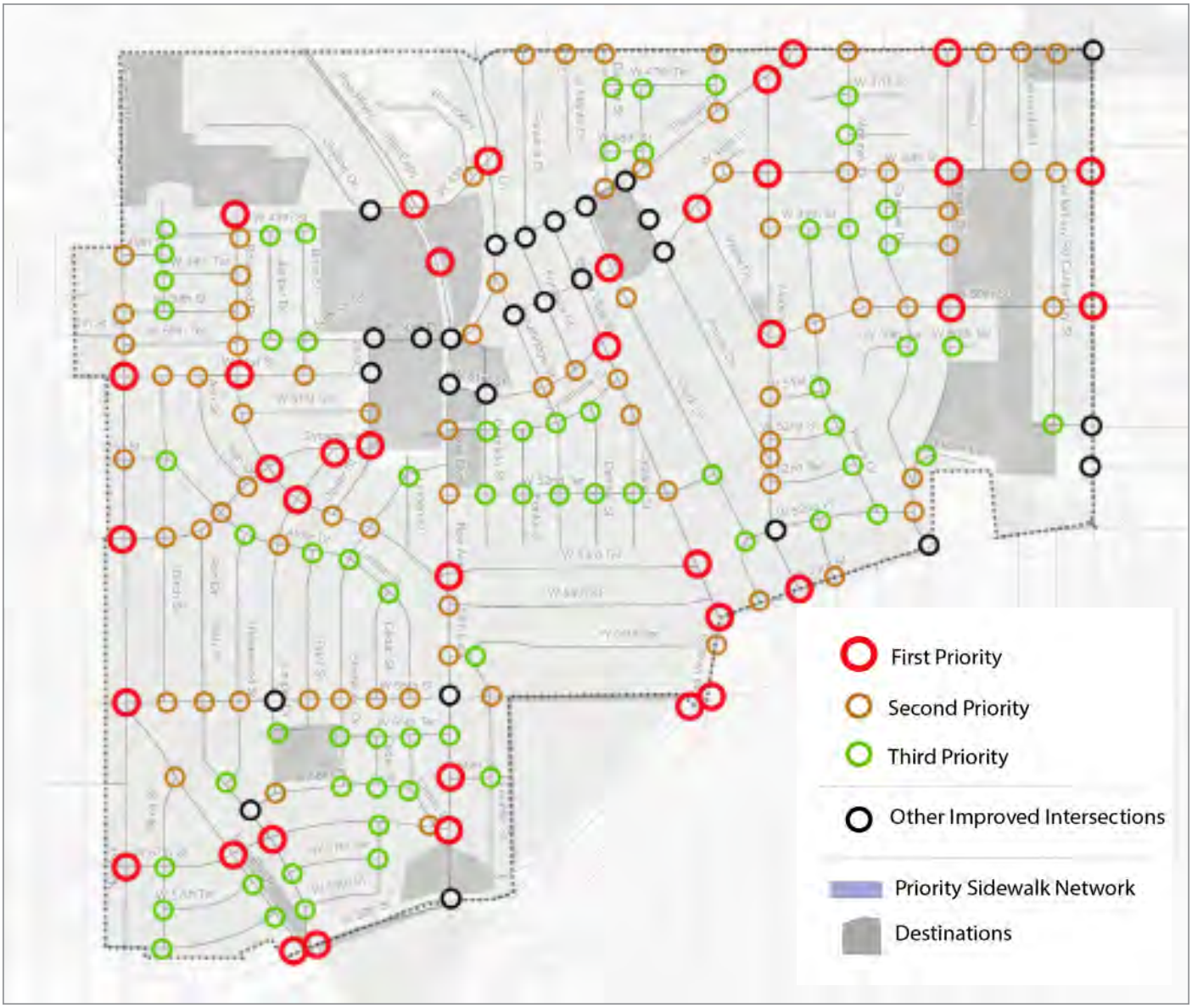


Figure 7 - Priority Intersections

Project Summaries

Sidewalks

Location	Priority	Side of Street	Located Between	Notes
Buena Vista St	First	West	Shawnee Mission Pkwy	
Community Center Ext to Skyline Dr	First	N/a	Rosewood Dr to Skyline Dr	Outside of R/W
Elledge pedestrian sidepath	First	N/a	Roe Blvd and Elledge Rd	
Granada to Roe Ln connection	First	N & E	End of Granada to Roe Ln	Potentially outside of R/W
Howe Dr	First	East	50th and 52nd streets	
Nall Ave	First	East	From 49th St to Nall Park sidepath	
Nall Park sidepath	First	N/a	Through Nall Park from Nall Ave to Rosewood Dr	Outside of R/W
Neosho Ave	First	West	48th St and 50th St	
Reinhardt Dr	First	East	47th St and 48th St	Neighborhood Greenway
Reinhardt Dr	First	East	End of Horizons parking to 50th St	Neighborhood Greenway
Roe Blvd	First	West	From 48th/49th to Johnson Dr	Planned CARS project shared use path
Roe Pkwy	First	East	48th St & level with end of other Roe Pkwy sgmt	
Roesland Elementary path	First	N/a	Parish Dr and Clark Dr	Neighborhood Greenway
Rosewood Dr	First	North	Roe Ave to Linden St	Second sidewalk
53rd Ter	First	North	Roe Ave to Rosewood Dr to Linden St	
56th St	First	North	Roe Ave and Granada St	

Location	Priority	Side of Street	Located Between	Notes
Alder Dr	Second	N & E	55th St and 56th St	
Ash St	Second	S & W	51st St and Sycamore Dr	
Birch St	Second	West	Roeland Dr and 58th St	
Birch St	Second	East	51st St and Sycamore Dr	
Canterbury Rd	Second	East	47th St and 48th St	
Canterbury Rd	Second	West	50th St and 51st St	
Clark Dr	Second	East	52nd Pl and 53rd St	
el Monte St	Second	West	47th St and dead end	
Howe Dr	Second	West	50th St and 51st St	
Linden St	Second	N & E	Sherwood Dr and 55th St	
Linden St	Second	East	52nd St and Rosewood Dr	
Mission Rd	Second	West	South of 47th St to start of side-walk	
Pawnee Dr	Second	East	50th and Reinhardt Dr	
Roe Pkwy (dead end segment)	Second	S & W	48th St and dead end	
Rosewood St	Second	West	Alder Dr and Ash Dr	
Sherwood Dr	Second	West	55th Ter and 56th St	
51st St	Second	North	Neosho Ave and Howe Dr	
51st St	Second	North	Canterbury St and Mission Rd	
52nd St	Second	South	Linden St and Roe Ave	
52nd St	Second	North	Neosho Ave and Howe Dr	
52nd Pl	Second	South	Clark Dr and Neosho Ave	
57th Ter	Second	North	Ash Dr and Cedar St	
58th St	Second	South	Nall Ave and Birch	

Location	Priority	Side of Street	Located Between	Notes
Alder Dr	Third	North	Birch St and Sherwood Dr	
Alhambra St	Third	East	47th St and Elledge Dr	
Ash Dr	Third	East	53rd St/Sycamore Dr and 55th St	
Birch St	Third	East	53rd St/Sycamore Dr and 55th St	
Birch St	Third	East	North of 49th St to dead end	
Briar St	Third	West	Alder St and 55th St	
Cedar St	Third	West	Linden St to 55th St	
Cedar St	Third	West	55th Ter to 56th St	
Cedar St	Third	East	57th St to 58th St	
Falmouth Rd	Third	East	47th St and 48th St	
Granada St	Third	N/E	Roe Ln and north end of Granada	
Granada St	Third	N/E	55th St and Johnson Dr	
Howe Dr	Third	West	49th St and 50th St	
Howe Dr	Third	West	51st St and 52nd Ter	
Linden St	Third	West	55th Ter and 56th St	
Pawnee Dr	Third	West	48th St and 50th St	
49th St	Third	South	Neosho Ave and Mohawk Dr	
49th St	Third	South	Pawnee Dr and Reinhardt Dr	
50th Ter	Third	South	Pawnee Dr and dead end	
51st Ter	Third	South	Rosewood Dr east to existing sidewalk	
52nd St	Third	North	Nall Ave and Birch St	
55th Ter	Third	North	Sherwood Dr and Roe Blvd	
56th St	Third	North	Roe Blvd and Granada St	
57th Ter	Third	South	Birch St and Roeland Dr	
58th St	Third	South	Birch St and Roeland Dr	
58th St	Third	South	Birch St and Roeland Dr	
Windsor	Third	East	47th St and 48th St	

Bikeways

Location	Infrastructure Type	Located Between	Notes
48th St	Neighborhood Greenway	Mission Rd and Parish Dr	
50th St	Neighborhood Greenway	Mission Rd and Neosho Ave	
50th Ter	Bicycle lane	Roe Blvd and Rosewood Dr	MARC Bikeway plan
51st St	Bicycle lane	Buena Vista St and Roe Blvd	
51st St	Bicycle lane	Rosewood Dr and Nall Ave	MARC Bikeway plan
53rd St	Neighborhood Greenway	Buena Vista St and Mission Rd	
53rd Ter	Neighborhood Greenway	Buena Vista St and Roe Blvd	
54th Ter	Neighborhood Greenway	Buena Vista and 55th St/Granada St	
55th St	Neighborhood Greenway	Granada St and Nall Ave	
Ash St	Neighborhood Greenway	56th St and Johnson Dr	
Buena Vista St	Neighborhood Greenway	Shawnee Mission Pkwy and Elledge Dr	
Cedar St	Neighborhood Greenway	51st St and Sycamore Dr	
Elledge Dr	Bicycle lane	Roe Ln and 47th St	
Fontana St	Neighborhood Greenway	47th St and Elledge Dr	
Juniper Dr	Neighborhood Greenway	Rosewood Dr and 56th St	
Mission Rd	Neighborhood Greenway	51st St and 53rd St	
Nall Ave	Neighborhood Greenway	Nall Park Path and 51st St	
Nall Ave	Bicycle lane	51st St and 58th St	
Nall Park Path	Shared-use path	Nall Ave to Rosewood Dr at Community Center	
Neosho Dr	Neighborhood Greenway	Elledge Dr and 53rd St	
Reinhardt Dr	Neighborhood Greenway	47th St and 53rd St	
Roe Blvd	Shared-use path, west side of street	48th St and Johnson Dr	
Roe Ln	Bicycle lane	Roe Blvd and city limits	MARC Bikeway plan
Roesland Elementary path	Neighborhood Greenway	Parish Dr and Clark Dr	
Rosewood Dr	Neighborhood Greenway	Community Center and Roe Blvd/53rd Ter	
Rosewood Dr	Bicycle lane	50th Ter and 51st St	MARC Bikeway plan
Sycamore Dr	Neighborhood Greenway	Nall Ave and Cedar St	

Intersections

Intersection	Priority	Notes
47th St and Elledge Dr	First	
47th St and Reinhardt Dr	First	
48th St and Mission Rd	First	
48th St and Neosho Ave	First	
48th St and Reinhardt Dr	First	
48th St and Roe Blvd	First	
48th St and Roe Ln	First	
48th St and Wells Dr	First	
50th St / Wells Dr and Neosho Ave	First	Complex intersection, improvements may involve adjustment to street geometry
50th St and Clark Dr	First	
50th St and Mission Rd	First	
50th St and Reinhardt Dr	First	
51 St and Nall Ave	First	
51st and Buena Vista St	First	
51st and Rosewood Dr	First	
53rd and Nall Ave	First	
53rd St and Buena Vista St	First	
53rd St and Neosho Ave	First	
53rd Ter and Buena Vista St	First	
53rd Ter and Roe Blvd	First	
55th and Nall Ave	First	Complex 5-way intersection, improvements may involve adjustment to street geometry
55th St and Shawnee Mission Pkwy	First	
56th St and Roe Blvd	First	
57th and Nall Ave	First	
57th St and Ash Dr	First	
57th St and Roe Blvd	First	
57th St and Roeland Dr	First	
Ash Dr and Johnson Dr	First	
Buena Vista and Shawnee Mission Pkwy (w)	First	
Clark Dr at Roesland Elementary Path	First	
Elledge Dr and Neosho Ave	First	
Elledge Dr and Delmar St	First	
Roe Blvd at Elledge path extension	First	
Roeland Dr and Johnson Dr	First	
Rosewood Dr and Juniper Dr	First	
Rosewood Dr at Community Center path	First	
Sycamore St and Cedar St	First	
Sycamore St and Juniper Dr	First	
Sycamore St and Rosewood Dr	First	

47th and Delmar St	Second	
47th St and Alhambra	Second	
47th St and Cantebury Rd	Second	
47th St and el Monte St	Second	
47th St and Falmouth Rd	Second	
47th St and Fontana St	Second	
47th St and Mohawk Dr	Second	
47th St and Windsor St	Second	
48th Ln and 48th St	Second	
48th St and Cantebury Rd	Second	
48th St and Catalina St	Second	
48th St and Falmouth Rd	Second	
48th St and Mohawk Dr	Second	
48th St and Pawnee Dr	Second	
48th St and Roe Pkwy	Second	
48th St and Windsor St	Second	
49th and Nall Ave	Second	
49th and Neosho Ave	Second	
49th St and Rosewood Dr	Second	
49th Ter and Rosewood Dr	Second	
50th and Nall Ave	Second	
50th St and Cantebury Rd	Second	
50th St and Howe Dr	Second	
50th St and Mohawk Dr	Second	
50th St and Pawnee Dr	Second	
50th St and Rosewood Dr	Second	
50th Ter and Nall Ave	Second	
50th Ter and Nall Ave	Second	
51st and Ash St	Second	
51st and Birch St	Second	
51st and Briar St	Second	
51st St and Fontana St	Second	
51st St and Neosho Ave	Second	
51st St and Rosewood Dr	Second	
51st St and Southridge St	Second	
51st Ter and Cedar St	Second	
51st Ter and Rosewood Dr	Second	
52nd and Nall Ave	Second	
52nd Pl and Reinhardt Dr	Second	
52nd St and Neosho Ave	Second	
52nd Ter and Buena Vista St	Second	
52nd Ter and Neosho Ave	Second	
52nd Ter and Roe Blvd	Second	
53rd St and Clark Dr	Second	

53rd St and Mohawk St	Second	
54th St and Roe Blvd	Second	
54th Ter and Buena Vista St	Second	
54th Ter and Roe Blvd	Second	
55th and Ash Dr	Second	
55th and Birch St	Second	On Priority Network
55th and Briar St	Second	
55th and Rosewood Dr	Second	
55th St and Cedar St	Second	
55th St and Granada St	Second	
55th St and Sherwood Dr	Second	
56th St and Juniper Dr	Second	
57th St and Linden St	Second	
Alder Dr and Juniper Dr	Second	
Catalina St and Buena Vista St	Second	
Elledge Dr and Alhambra	Second	
Elledge Dr and Fontana (S)	Second	
Parish Dr and Neosho Ave	Second	
Pawnee Dr and Reinhardt Dr	Second	
Roe Blvd and Sycamore Dr	Second	
Roe Ln and Southridge St	Second	
Roe Ln at Granada St sidewalk extension	Second	
Rosewood Dr and Cedar St	Second	
Sherwood Dr and Rosewood Dr	Second	
Sycamore Dr and Buena Vista St	Second	
Sycamore St and Alder Ln	Second	
Sycamore St and Alder Ln	Second	
Sycamore St and Ash St	Second	
Sycamore St and Birch St	Second	
54th St and Buena Vista St	Second	
57th St and Cedar St	Second	

47th Pl and Mohawk Dr	Third	
47th St and Delmar St	Third	
47th Ter and Catalina St	Third	
47th Ter and Delmar St	Third	
47th Ter and Mohawk Dr	Third	
48th Ter and Pawnee Dr	Third	
48th Ter and Reinhardt Dr	Third	
49th St and Birch St	Third	
49th St and Briar St	Third	
49th St and Howe Dr	Third	
49th St and Juniper Dr	Third	
49th St and Mohawk Dr	Third	
49th St and Pawnee Dr	Third	
49th St and Reinhardt Dr	Third	
49th Ter and Birch St	Third	
50th and Birch St	Third	
50th Ter and Briar St	Third	
50th Ter and Juniper Dr	Third	
50th Ter and Reinhardt dr	Third	
51st St and Cantebury Rd	Third	
51st St and Howe Dr	Third	
52nd and Birch St	Third	
52nd Pl and Clark Dr	Third	
52nd Pl and Howe Dr	Third	
52nd Pl and Mohawk St	Third	
52nd St and Howe Dr	Third	
52nd Ter and Catalina St	Third	
52nd Ter and Clark Dr	Third	
52nd Ter and Delmar St	Third	
52nd Ter and Fontana St	Third	
52nd Ter and Granada St	Third	
52nd Ter and Howe Dr	Third	
52nd Ter and Southridge St	Third	
54th Ter and Granada St	Third	
55th St and Linden St	Third	
55th Ter and Cedar St	Third	
55th Ter and Juniper	Third	
55th Ter and Linden St	Third	
55th Ter and Roe Blvd	Third	
55th Ter and Sherwood Dr	Third	
56th and Nall Ave	Third	
56th St and Cedar St	Third	
56th St and Granada St	Third	
56th St and Linden St	Third	

56th St and Sherwood Dr	Third	
57th and Birch St	Third	
57th Ter and Ash Dr	Third	
57th Ter and Birch St	Third	
57th Ter and Cedar St	Third	
57th Ter and Roeland Dr	Third	
58th and Birch St	Third	
58th and Nall Ave	Third	
58th St and Ash Dr	Third	
58th St and Roeland Dr	Third	
Alder Dr and Briar St	Third	
Alder Dr and Sherwood Dr	Third	
Ash Dr and Rosewood St	Third	
Elledge Dr and Catalina St	Third	
Linden St and Cedar St	Third	
Lucas Ln and Reinhardt Dr	Third	
Parish Dr at Roesland Elementary path	Third	
Roeland Dr and Birch St	Third	
Rosewood Dr and 53rd Ter	Third	
Rosewood Dr and Linden St	Third	
Rosewood Dr and Roe Blvd	Third	
Sherwood Dr and Linden St	Third	
Skyline Dr at Community Center path extension	Third	
Sycamore Dr and Delmar St	Third	
Sycamore Dr and Fontana St	Third	
Sycamore Dr and Granada St	Third	
Sycamore Dr and Southridge St	Third	

Quick Fix Guide

Roeland Park, Kansas | August 2017

Quick Fix Guide

What's in the Guide?

The Pedestrian and Bicycle Infrastructure Strategy lays out a path toward achieving a safe, interconnected city for people traveling on foot and by bicycle. The strategy identifies locations where improvements are recommended, but recognizes that the detailed design of interventions will be crafted later, in response to budgetary constraints and public input.

Major interventions -- such as sidewalk construction, or the installation of a new traffic signal -- are often implemented through a conventional planning/design process, public input, and a formal budget program. These steps can sometimes require more resources and a longer project timeline.

Alternative approaches to project delivery may be implemented more quickly and inexpensively using a "quick-build" method. Precedents exist for building simple traffic calming measures, pedestrian crossings, and basic bike infrastructure using this a "quick-build" approach.

Quick-build interventions offer several benefits:

- Interventions are built with inexpensive materials that reduce project cost.
- A smaller cost means a municipality may be able to fund a quick-build project more quickly, avoiding long budgeting processes or the funding cycle for federal grants.
- Quick-build projects can function as demonstration or pilot projects that test the effectiveness of a design. Because the materials are often non-permanent or easily removable, officials can easily adapt an intervention or to replace it with more permanent construction.

This guide highlights a number of interventions that could be constructed using this quick-build approach that would support recommendations in the Pedestrian and Bicycle Infrastructure Strategy. An additional section shows how these interventions can be adapted for different purposes, from a pop-up demonstration to permanent infrastructure.

Table of Contents

Image source: Better Block KC

Pavement Markings

Marked Crosswalks

Highlighting a pedestrian crossing with a painted crosswalk alerts drivers to the potential presence of a pedestrian and helps indicate where the pedestrian can safely cross.

- "Continental" and "ladder" style crosswalks are the most visible styles.
- Especially at uncontrolled, mid-block crossings, marked crosswalks should be accompanied by pedestrian-crossing signage.
- Stop bars across the vehicle travel lane are recommended to reinforce the presence of the crosswalk.
- Permanent pavement markings should be done with thermoplastic, which is more reflective and more durable than other materials.

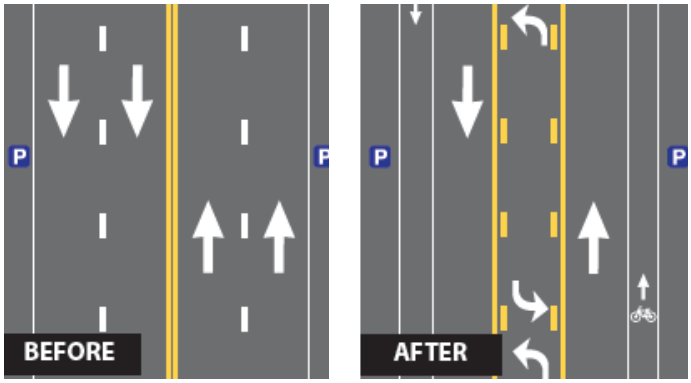
Source: PedBike Images

Source: PedBike Images\Michael Frederick

Lane Striping

On arterial and collector streets, the striping configuration can be changed or new striping added to reduce lane width.

- Research shows that reducing lane widths to as narrow as 10 feet can reduce average speed and reduce high-end speeding, while not diminishing the capacity or level of service of the road.
- Restriping and narrowing lanes offers the opportunity to add new facilities to the road, such as bike lanes or on-street parking.
- Adding striping to define the edge of a parking lane constrains the travel lane and can slow traffic. Parking also has an extra traffic calming benefit because it forces traffic to stop as a vehicle pulls into or out of a parking space.
- Restriping can be completed as part of already planned resurfacing projects or as its own project.



Source: FHWA

Source: Better Block KC

Source: FHWA

Bicycle Infrastructure

Bike Lanes

Bike lanes provide a dedicated space for cyclists to travel in the roadway. A well-designed lane improves the safety and comfort of cyclists and helps motorists interact with cyclists.

- Typically bike lanes are located on the outside of an automobile lane, adjacent to the curb.
- If on-street parking is permitted, the lane may be located between the travel lane and parking lane, or along the curb, buffered from the travel lane by the parking lane.
- Lanes should be a minimum of 5 feet wide (including the curb gutter) with a rideable surface of 4 feet minimum.
- An additional buffer at least 18 inches wide is strongly recommended between a bike lane and a parking lane to protect cyclists from the "door zone" of parked cars.
- A lane line should be dashed where the lane passes along a right-turn lane, through an intersection or past the entrance to a driveway, indicating that a car might cross the bike lane. Painting the entire width of the lane bright green along these segments is recommended to remind motorists and cyclists of the conflict zone.
- Bollards, planters, or jersey barriers can provide vertical separation of a bike lane from automobile traffic or parked cars.

Source: NACTO

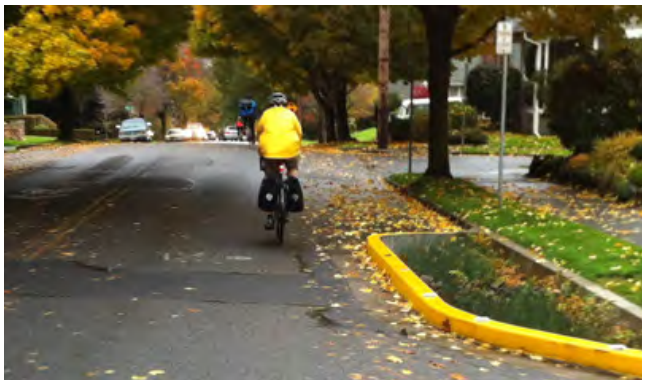
Source: City of Columbus, OH

Source: NACTO

Neighborhood Greenways

Sometimes called "Bicycle Boulevards," the Neighborhood Greenways are streets where conditions allow bicycle traffic to safely mix with automobiles.

- Neighborhood Greenways use signs, pavement markings, and traffic calming measures to slow vehicles and increase comfort for cyclists.
- Many streets in Roeland Park are good candidates for Neighborhood Greenways. They are too narrow for bike lanes but could be enhanced by minor design modifications that slow down traffic and enhance safety.
- Neighborhood Greenways present an opportunity to enhance priority streets for all users, and to incorporate design elements that increase the comfort and safety for cyclists in coordination with any adjacent sidewalk improvements.
- A network of Neighborhood Greenways is recommended in the Pedestrian & Bicycle Strategy. This network overlaps with the Priority Sidewalk Network.



Source: NACTO

Source: BikeMore Baltimore

Bike Corrals

Bike corrals are large bicycle racks placed in a car parking space in a roadway or parking lot and protected by curbs or barriers.

- Corrals provide bicycle parking where there is demand for parking but where there is limited space for a rack off-street.
- A corral occupying one parking space can accomodate 8-24 bicycles, depending on the size of the space and the design of the corral.

Source: NACTO

Intersections

Complex Intersections

Complex intersections can create hazardous conditions for pedestrians. Simple adjustments to intersection geometry can address some of the hazards.

Source: Google Streetview

- Complex intersections result from a street intersecting with another street at a non-right angle, or from more than two streets intersecting.
- Such unconventional intersections create potentially hazardous conditions for pedestrians and make vehicle movements more complicated and hard to manage.
- Acute or obtuse angled intersections can reduce visibility for motorists or permit fast turns, which endanger pedestrians.
- Meanwhile, these intersections can increase the crossing distance for pedestrians.
- Adjusting complex intersections can make them safer for pedestrians and motorists. When intersections are reconfigured, roadway space can often be reallocated for pedestrian use.

Example Treatments

Y-Intersection
"Add island or square-off. Limit turning speed around obtuse angle, shorten crossings, separate vehicle flows."

Y Plus Grid
"Add island or square-off. Limit turning speed around obtuse angle, shorten crossings, separate vehicle flows."

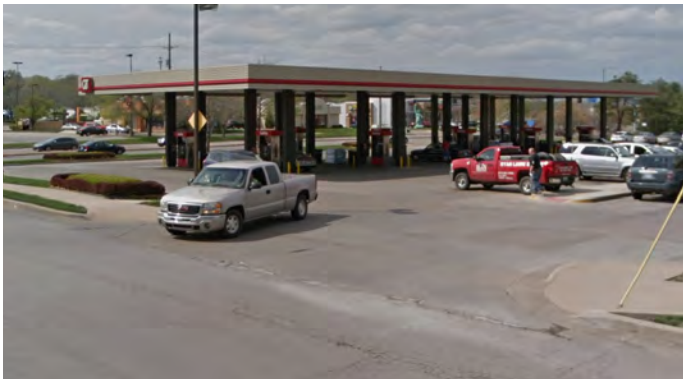
Small and Large
"Use curbs to manage drivers. Extend medians."

Source: NACTO *Urban Street Design Guide*

Driveways

Driveways, especially at the entrances to major commercial or multifamily developments, present many of the same challenges as full intersections.

- Driveway width, radius, and other features can affect pedestrian safety. Driveways that are too wide across might encourage motorist to speed through a driveway. Wide turning radii also permit fast and reckless driving through a driveway.
- In most cases, crossing pedestrians have the right-of-way at driveways, but there is often little to indicate this to motorists.
- Striping of crosswalks or stop lines can help alert motorists to the potential presence of people walking.
- Raised crossings can encourage careful maneuvering by motorists at driveway entrances and prioritize pedestrian traffic.
- Splitter islands channelize and guide traffic through a driveway entrance. These can be built with bollards and striping. A center lane stripe can achieve a similar effect.
- Differentiating sidewalk material or texture across a driveway can also bring attention to potential pedestrians, though this is most likely a longer-term measure.



Source: Google Streetview

Source: PedBike Images\Laura Sandt

Source: PedBike Images\Dan Burden

Curb Extensions

Curb extensions, or bulb-outs, expand the edge of a curb into a roadway. This space might be used for additional landscaping or wider sidewalks, and usually functions as a traffic calming element by narrowing the travel lane and prompting drivers to slow.

Intersections

Bulb-outs at intersections can be designed to slow approaching traffic, to shorten the crossing distance for pedestrians, or to calm vehicle turns by making curb radii smaller.

- Bulb-outs appear to constrain the travel lane, encouraging traffic to slow.
- By extending the curb into the street, the crossing is distance is shortened for pedestrians.
- With the extended sidewalk, pedestrians are more likely to be in a driver's field of vision.
- Intersection bulb-outs can shorten the turn radius for vehicles, forcing motorists to turn more carefully and increasing safety for pedestrians.

Source: PedBike Images

Source: City of Seattle

Pinch Points & Chicanes

Curb extensions can slow traffic or improve pedestrian crossings at mid-block locations.

- Pinch-points are mid-block curb extensions that calm traffic by narrowing the travel lane, while reducing the crossing distance for pedestrians.
- A chicane diverts travel lanes into an s-shaped path, forcing drivers to slow and maneuver more carefully.
- Combined with a crosswalk, a mid-block bulb-out can form a mid-block pedestrian crossing with shorter crossing distance and better visibility for pedestrians.

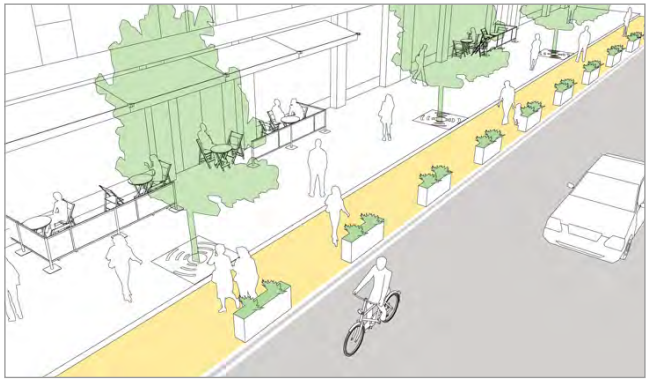
Source: Above & below: FHWA

Sidewalk Widening

Pedestrian space can be provided without building new sidewalks by expanding the sidewalk zone beyond the curb line.

- Where the space between curbs is wider than is necessary for travel lanes, the extra space can be devoted to pedestrians. This space functions as a widening of existing sidewalks or as a new sidewalk where none exists. Typically, barriers, such as plastic bollards or planter boxes, are placed to separate pedestrian space from vehicles.
- A simple intervention might only include barriers; a more comprehensive project could include street furniture, plants, pavement paint and other elements to increase visibility and attractiveness of the project.
- Sidewalk widening can be useful to relieve busy sidewalks, as a traffic calming measure or to provide new amenity zones.

Source: Better Block KC

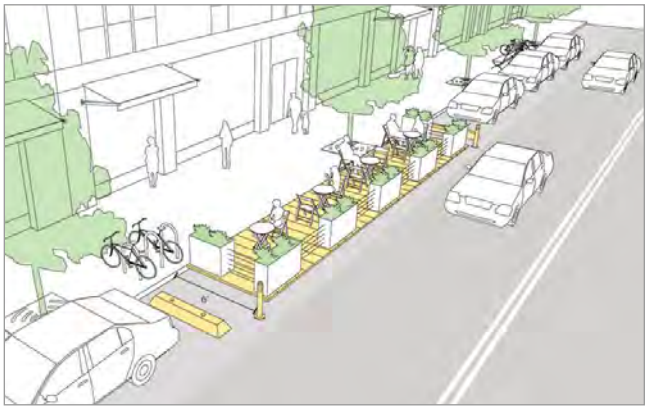


Source: NACTO

Parklets

Like sidewalk widening, parklets reallocate road space to pedestrian uses. A parklet usually consists of a small platform occupying several parking spaces on which benches or street furniture can be placed. This essentially creates a small park.

- Parklets can function as small gathering spaces. Adjacent cafes and restaurants often add outdoor seating to the parklet.
- Parklets can also be used to create pedestrian-friendly spaces within parking lots.
- This intervention is often implemented with cooperation with property owners or through community initiative.



Source: NACTO

Signs

Signs

Signs can be a cost-effective measure to encourage vehicles to yield to pedestrians at crossings.

- Signs should be used in conjunction with marked crossings.
- The effectiveness of different signage types varies. At mid-block crossings, small, in-street pedestrian-crossing signs have been shown to be nearly as effective as a full on-call signal in getting motorists to yield.
- High-visibility signs should be placed on both sides of a street. This creates a “gateway effect” that reinforces the presence of a crossing.

Source: NACTO

Source: BikeWalkKC

The Quick-Build Process

Quick-build projects can be designed to meet a variety of goals. Such interventions can be designed to be a permanent, final design or they can form part of an iterative process in which a more captial-intensive design is built later. Because they are often built using less permanent materials, quick-build projects can function as very basic "demonstration" projects that show the public how a particular design – such as a bike lane – works. Or they might also work as "pilot" projects in which the effectiveness of the change is assessed. These scenarios can support a public engagement process. Meanwhile, a quick-build project could serve as an interim installation of an intervention until funding is secured for a more expensive, permanent construction.

Different levels of financial commitment, government involvement, and public engagement may be needed or advisable, based on the intended goals of the quick-build intervention. The table below from Street Plans Collaborative details the requirements for different quick-build project types.

This chart illustrates the progression of an iterative approach to project delivery. Though not all projects need to follow this exact model, it can be helpful to see how each project phase builds towards the next, using incremental steps to deliver a capital project intended to create lasting change.

Project Type (time interval · relative cost)	DEMONSTRATION (1 day - 1 month · $)	PILOT (1 month- 1 year · $$)	INTERIM DESIGN (1 year - 5 years · $$$)	LONG-TERM/CAPITAL (5 years - 50 years · $$$$)
Project Leaders	Can be led by anyone (city, citizen group, or both!)	Government / organizational leadership + involvement required	Government / organizational leadership + involvement required	Government / organizational leadership + involvement required
Permission Status	Sanctioned or unsanctioned	Always sanctioned	Always sanctioned	Always sanctioned
Materials	Low-cost, typically low-durability. Can be borrowed or easily made	Relatively low-cost, but semi-durable materials	Low-moderate cost materials, designed to balance flexibility with maintenance needs	High-cost permanent materials that cannot easily be adjusted
Public Involvement	Public input + public action	Public input, champion engagment, government / organizational stewardship	Public input, government / organizational stewardship	Public input, government / organizational stewardship
Flexibility of Design	High: organizers expect project to be adjusted and removed.	High: organizers expect project to be adjusted; it *may* be re-moved if it does not meet goals	Moderate: organizers expect project to be adjusted, but it is intended to remain in place until capital upgrades are possible	Low: project is considered a permanent capital upgrade that is unlikely to be adjusted signifi-cantly once installed
Collect data to refine approach for current or future projects?	Recommended	Always	Always	Always - project performance can inform future investments

Source: Street Plans Collaborative, *Tactical Urbanist's Guide to Materials and Design, Version 1.0*

Materials and Phasing

Many of the benefits of quick-build projects are made possible by using inexpensive, versatile materials. Even within the range of quick-materials, different quality materials exist to support different possible goals of a quick-build project. The examples below show how the same type of intervention can be built with different materials to support a different type of project goal.

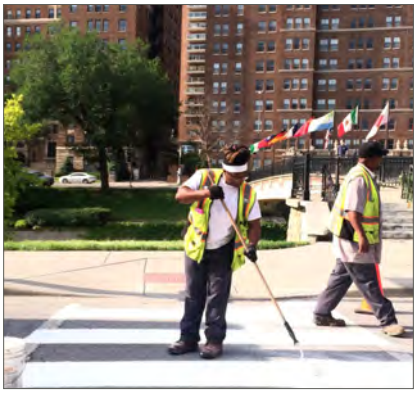
Examples

Marked crosswalk

Source: Better Block KC

Project term:
Demonstration

Materials:
Tape, chalk, paint



Source: BikeWalkKC

Project term:
Pilot or permanent

Materials:
Paint

Source: FHWA

Project term:
Permanent

Materials:
Durable markings such as epoxy paint, thermoplastic paint, preformed plastic

Protected Bike Lane

Source: Greater Victoria Placemaking Network

Project term:
Demonstration, pilot

Materials:
Traffic cones, store-bought planters

Source: City of Columbus, OH

Project term:
Interim or permanent

Materials:
Traffic cones, store-bought planters, paint

Source: City of Cambridge, MA

Project term:
Permanent

Materials:
Concrete separation from roadway

Curb extension

Source: Better Block KC

Project term:
Demonstration

Materials:
Store-bought plants, removeable planters, cones, paint

Source: City of Austin

Project term:
Pilot, interim, or permanent

Materials:
Flexible delineator posts, removeable planters, epoxy paint

Source: FHWA

Project term:
Permanent

Materials:
Concrete curb

Intersection

Source: TrailNet St. Louis

Project term:
Demonstration

Materials:
Cones, DIY barriers, paint, chalk, signs

Source: Wikimedia\Richard Drdul

Project term:
Pilot, interim, or permanent

Materials:
Temporary curb, signs

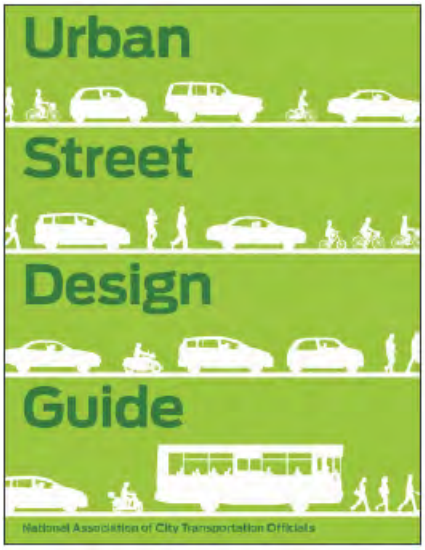
Source: PedBike Images

Project term:
Permanent

Materials:
Concrete curb, signs

Other Resources

The following publications have additional information on quick-build projects, including intervention designs, materials, and best practices for project delivery.



Urban Street Design Guide
National Association of City Transportation Officials (NACTO)

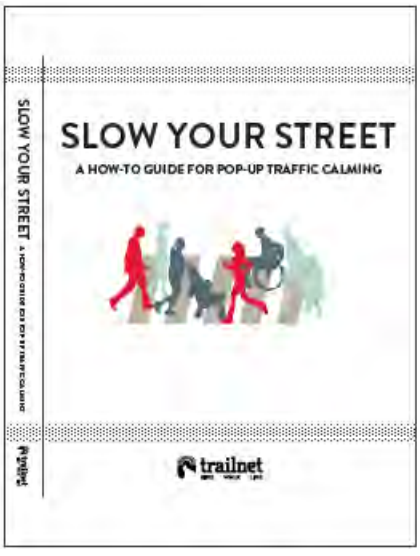
A best practice guide for designing safe multimodal streets

Quick Builds for Better Streets
People for Bikes

This publication describes the quick-build model from the project delivery perspective

Tactical Urbanist's Guide to Materials and Design
Street Plans Collaborative

A detailed guide to materials and best practices for pop-up and quick-build infrastructure projects



Slow Your Street
Trailnet (St. Louis)

A guide for building "pop-up" traffic-calming demonstrations

This report was produced for City of Roeland Park by BikeWalkKC and made possible through funding by the LiveWell Johnson County program and the Johnson County Department of Health and Environment.

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Our mission is to redefine our streets as places for people to build a culture of active living.

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