



Chapter Six

DESIGN TOOLBOX

“It is difficult to design a space that will not attract people. What is remarkable is how often this has been accomplished.”

– *William H. Whyte*



CHAPTER SIX

design toolbox

IN THIS CHAPTER

PUBLIC ROADWAY IMPROVEMENTS

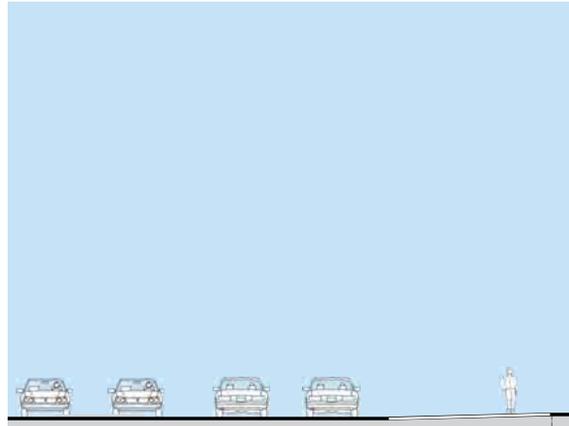
PUBLIC STREETSCAPE IMPROVEMENTS

PRIVATE REALM IMPROVEMENTS

SPECIFIC CAPITAL URBAN DESIGN TOOLS are applicable to West Florissant Avenue. Some are less common than others, but each can play a meaningful role in achieving the vision for the corridor. They primarily consist of capital improvement suggestions, but also include policy tools. Recommended tools for West Florissant’s public realm, including roadway and streetscape improvement tools for the full public-right-of-way, and its private realm are outlined in this chapter. They are intended to help guide the redesign of the corridor and shape private development that will occur along the corridor.



Travel zones are poorly-defined and inequitably allocated on West Florissant Avenue today



Unclear, poorly defined travel zones with unnecessarily wide travel lanes and little to no dedicated space for pedestrians, bicyclists and landscaping



This street has clearly-defined and equitably allocated travel zones, separated by landscaped buffers



Clear, carefully defined travel zones with narrowed travel lanes and dedicated space for pedestrians, bicyclists, streetlife, and landscaping

6.1 PUBLIC ROADWAY IMPROVEMENTS

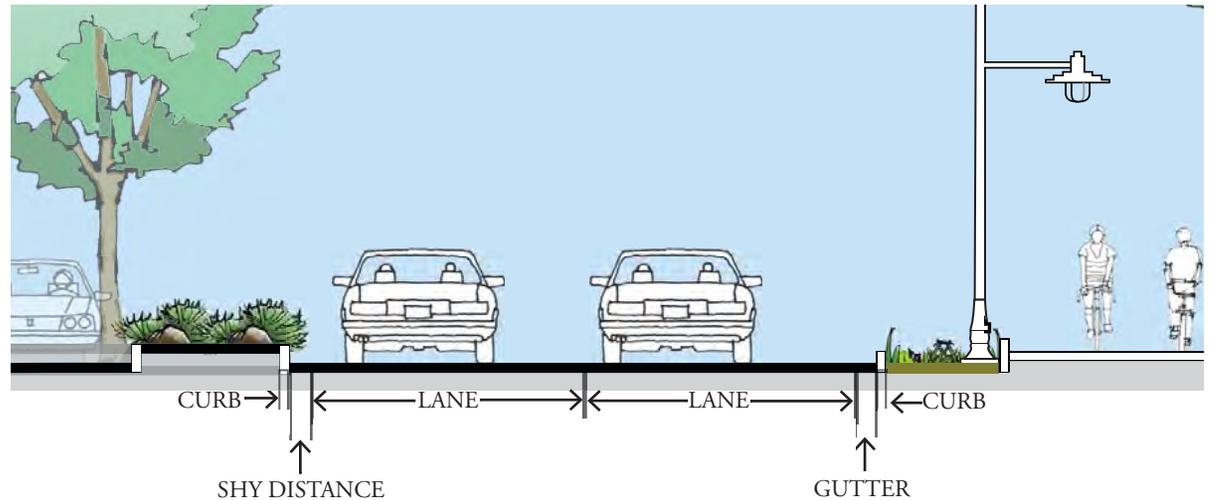
6.1.1 TRAVEL ZONE DEFINITION

Travel zone definition more clearly distinguishes space for vehicle travel lanes, bicycle and pedestrian facilities, medians, and landscaped areas within the public right-of-way. For West Florissant, defined travel zones will help transform the use and perception of the street from one that is vehicle-oriented to one that is more fairly allocated for the variety of users and clearly multi-purpose. Travel zone definition will not only clarify and consolidate space for drivers, it will also create improved, safer dedicated space for pedestrians and bicyclists, as well as for trees, landscaping and other green features.

According to the St. Louis Great Streets Project, travel zone definition through narrowing lanes helps to reduce travel speeds. Conversely, lanes that are excessively wide contribute to higher speeds, resulting in more severe crashes. While observations indicate that speeding is not currently a major issue, that is in part because smooth flow is prevented by so many driveways and turning traffic. However once access management measures described in the Plan are implemented, it is possible that speeding could become more common unless appropriate traffic calming techniques are used, as described here.

Travel zone definition recommendations include:

- Narrow travel lanes. Reducing lane widths to 11 feet in most places is preferred. This not only creates new space for other right-of-way users, but helps to calm traffic. Although speeds are not a major issue on the corridor, several access management recommendations (section 6.1.2) will ease congestion in commercial areas and improve safety. The smoother traffic flow that results could invite higher speeds unless other measures, such as narrowing lanes, are taken as well.
- Clearly define distinct zones for vehicles, bicycles, and pedestrians
- Use new landscape plantings in medians and sidewalk buffers, to help improve aesthetics and serve as visually clear and appealing dividers between travel zones



The diagram above helps clarify terminology used in the Master Plan: curb, lane, shy distance, and gutter.



Existing allocation of space within the West Florissant Avenue right-of-way



Recommended allocation of space within the West Florissant Avenue right-of-way

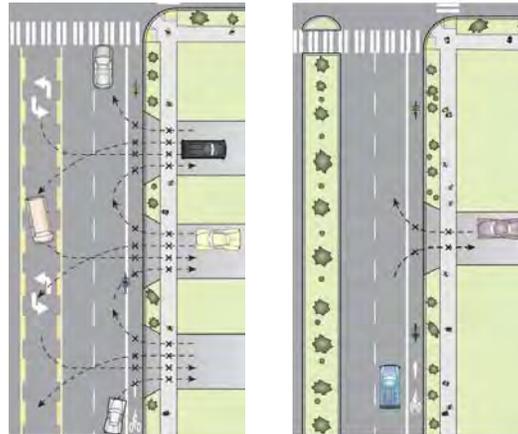


Before (top) and after (bottom) street redesign with access management Source: FHWA



6.1.2 ACCESS MANAGEMENT

Access management is a set of customized design techniques that benefits all stakeholders through lower crash rates, a better pedestrian environment, smoother traffic flow, better curb appeal, and a more beautiful and green street. In order to work, there are compromises that stakeholders need to understand and negotiate: with the consent of property owners, some driveways would be consolidated and parking might be shared (this can also result in an increase in parking). Access Management has been used across the St. Louis region, and St. Louis County has its own set of guidelines (<http://www.stlouisco.com/PropertyandRoads/HighwayPublicationsManuals>).

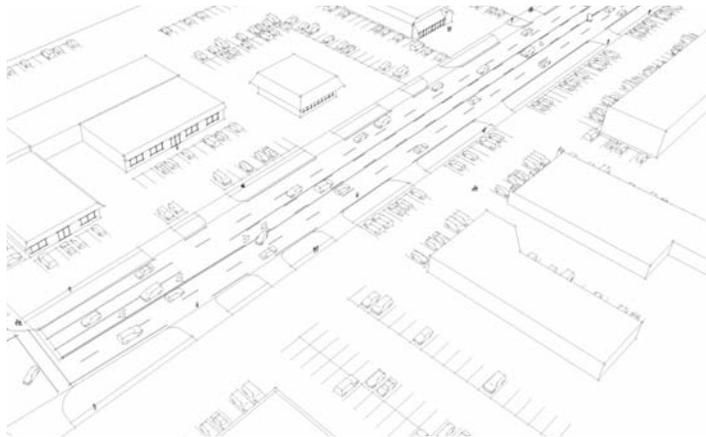


Uncontrolled access (left) results in numerous conflict points, while controlled access minimizes conflicts (right). Source: Oregon Department of Transportation

Access management recommendations for West Florissant Avenue include:

- Utilize driveway management tools, by consolidating or moving driveways, with willing collaboration from property owners. Having an exclusive driveway for every business in a dense commercial district creates extremely unsafe conditions and prevents any possibility of creating an attractive walkable town center type of shopping district
- Use raised medians (see 5.1.3 for more detail) that limit cross-roadway movements and direct vehicles to designated intersections for left turns and, where appropriate, U-turns
- Use proven tools like pedestrian countdown signals and signal timing to help control crossings for the safety of all road users
- Use u-turns to limit left turns in certain locations while providing drivers easy routes to the land uses on the far side of the road. U-turns would be most applicable in Segments 3 and 5 to facilitate better access to businesses. More specific locations will need further study in the design phase, with input and collaboration from affected property owners. County guidelines require that u-turns maintain at least 100' from conflicting entrances (see diagram 4 on facing page)

1



Uncontrolled access creates safety problems, with 8 potential conflicts at every driveway.

3



Driveway consolidation further improves safety and flow, creates more continuous sidewalks for shoppers, and increases parking.

2



Medians are a first step to help control access and reduce crashes and congestion, improving safety for all and enhancing the streetscape.

4



Access management enhancements can be catalysts for an improved street environment and pedestrian experience. U-turns are shown here to illustrate how access to businesses on the opposite side can be provided.



Medians make a dramatic difference in the character and feel of a street, calm traffic

RAISED MEDIANS ARE THE MOST EFFECTIVE ACCESS MANAGEMENT STRATEGY ON HIGH-VOLUME URBAN ROUTES. ROADWAYS WITH RAISED MEDIANS ARE AT LEAST 25 PERCENT SAFER THAN MULTILANE UNDIVIDED SECTIONS AND 15 PERCENT SAFER THAN TWO-WAY LEFT-TURN LANE CROSS-SECTIONS IN SUCH HIGH TRAFFIC SITUATIONS.

— *St. Louis County Access Management Guidelines*



Medians can be designed to allow for emergency access where needed



Medians calm traffic, improve traffic flow, and significantly improve safety for all road users

6.1.3 MEDIANS

A median is a buffer in the center of a street that calms traffic by separating opposing lanes of traffic and reallocating driving space for street trees and landscaping. Medians can maintain and provide dedicated space for left-turns, helping improve traffic flow. By helping control vehicular access at intersections and to and from access drives, medians significantly improve traffic safety, reducing vehicle speeds as well as the number of potential conflict points between vehicles moving in opposite directions; studies have shown a reduction in crashes of 15 percent.

Medians often contain landscape plantings, specialty paving, public art or gateway elements, and even dedicated transit facilities, and can be designed to manage storm water. St. Louis County Access Management Guidelines specify that medians are the “most effective access management strategy on high-volume routes” such as West Florissant Avenue. This plan recommends a planted median along most segments of West Florissant.

Recommendations for the design of the median include:

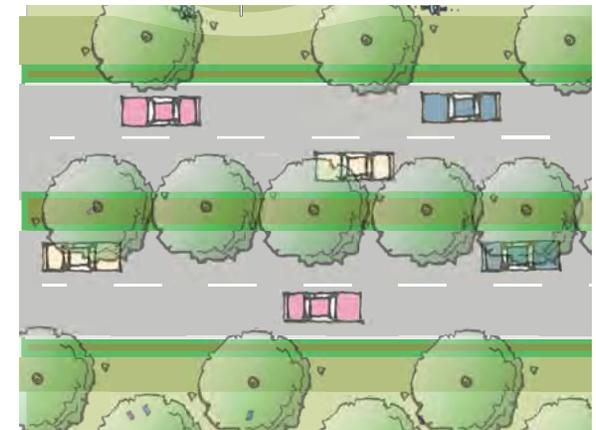
- Plant trees and appropriate landscaping wherever width of the median allows
- Where planting is not possible, pave with distinctive paving rather than concrete, to help brand the street
- Extend the median nose beyond crosswalks to provide a protected pedestrian refuge
- Design the median to allow for emergency access modifications such as mountable curbs, and periodic breaks in landscaping to allow for median crossings by emergency vehicles
- Ensure trees have at least 6' canopy clearance above finished top of curb elevation
- Ensure low level planting is no more than 18" above finished top of curb elevation
- Allow clear sight lines for pedestrians and motorists at intersections and mid-block crossings
- Allow clear views of business signage
- Allow gateway elements in the median



A representative illustrative plan of the recommended median for West Florissant, showing a continuous raised stormwater median with trees and planting wherever possible, left-turn pockets, and “noses” at intersections



Medians should be at least 16' wide to allow for a 5' minimum pedestrian refuge with 11' turn lane



Prototypical plan with planted stormwater median



Continental, or “ladder-style” crosswalks are recommended, with pedestrian refuges



Typical intersection showing marked crosswalks, with special marking for multi-use trail



Marked and buffered midblock crosswalks, like this one recommended at Hudson Creek, improve pedestrian connectivity

6.1.4 CROSSWALKS

Well-designed and maintained crosswalks are critical elements of the streetscape. Marked crosswalks enable pedestrians to move safely, conveniently and predictably across roadways. When treated with decorative paving material, crosswalks also provide a unique streetscape design treatment to emphasize pedestrians’ presence and create a sense of place.

Crosswalks can be used both at intersections and mid-block. Midblock locations should seek to alleviate the problem of long distances between intersections, link important destinations, or align with bus stops to help transit riders make transfers. Metro’s own policy is to favor improved pedestrian facilities over minor reductions in vehicular level of service in key pedestrian areas.

Although intersection crosswalks are not required to be marked, marked crosswalks are far safer for pedestrians, and only marked crosswalks are recommended for the study area.

Crosswalk recommendations include:

- Provide clearly marked crosswalks at all controlled intersections and at intersections of key streets, and ensure all crosswalks have curbs ramps for ADA access
- Locate crosswalks at mid-block crossings as indicated on the corridor segment illustrative plans (see Chapter 5)

- Mark crosswalks with painted stripes on the pavement, or with other specialty materials associated with branding or district identity
- Mark crosswalks for the multi-use path with special paving or painting to highlight these crossings for drivers
- Use crosswalks at least 10' wide, or wider in locations with high pedestrian demand or narrow sidewalks
- Use pedestrian refuges at least 5' wide
- Where possible, provide bulbouts at intersections and mid-block crossings to minimize crossing distance and increase pedestrian safety and visibility
- Install adequate signage and pavement markings at crosswalk locations for motorists and pedestrians
- At locations where safety is a concern, consider using several combined measures to ensure safe crossing. Crosswalks can be enhanced with traffic controls, median pedestrian refuges, curb extensions, traffic calming, street lighting, and warning signage
- Enhance midblock crosswalks with pedestrian-activated signals.



Special paving in intersections helps give a street a unique identity - and also calm traffic

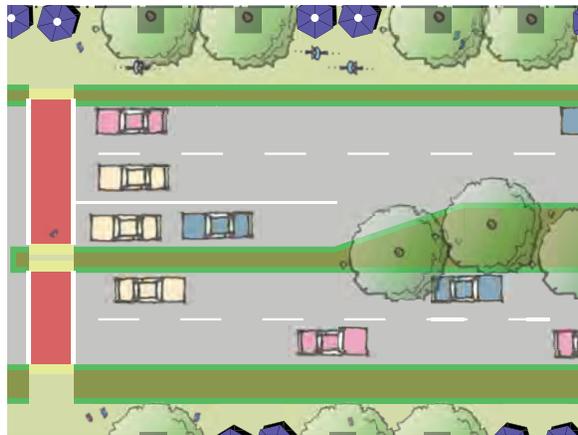


Special markings or paving should be used for the multiuse trail crosswalks, as is done distinctly and uniquely on Indianapolis' world-class Cultural Trail



Pedestrians should have safe and attractive sidewalks for a vibrant experience; activity or streetlife zones should be considered to enliven the space between the public and private realms

140



Buffered sidewalks and the multiuse trail will provide a high-quality pedestrian experience, especially when combined with activation in the streetlife zone



Attractive and safe sidewalks provide room to stroll, green buffers, and seating where appropriate

6.1.5 SIDEWALKS AND WALKING PATHS

Attractive and safe facilities for pedestrians are critical in a multi-modal roadway. These include sidewalks and pedestrian trails, as well as shared multiuse paths. Well-designed sidewalks and walking paths are safe and comfortable, making them inviting and more likely to be used, especially when combined with landscape planting and adequate lighting.

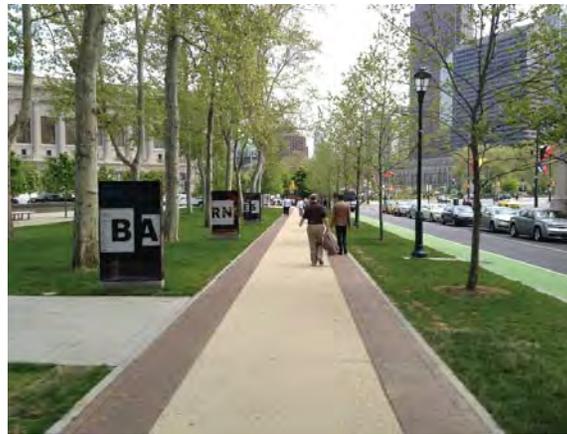
Recommendations for pedestrian facilities on West Florissant include:

- Ensure clear, continuous and unobstructed ADA-accessible sidewalks on all street segments
- Provide a 6-foot minimum clear pathway on sidewalks along commercial uses, and a 5-foot minimum clear pathway in residential areas
- Depending on desired private edge condition, design sidewalks to be used as an active place of commerce, outdoor dining, informal food kiosks, or other active uses
- Create pedestrian easements where needed within the private realm, to provide wider ADA-accessible sidewalks, trees and landscaping amenities for the pedestrian realm, and to improve pedestrian connectivity via public pathways through developments

- Minimize the use of curb cuts along sidewalks to reduce the impact on pedestrian safety and overall quality of pedestrian environment
- Seamlessly link pedestrian facilities to the wider regional pedestrian trail network, to help reduce automobile use and increase physical activity for associated health benefits
- Design and allow for a separate street life or activity zone along active building frontages, with a 4-6 foot width. Provide elements that support social and commerce functions such as furniture (for outdoor seating and dining) and planters in this activity zone
- Design and allow for a minimum 5-foot green buffer zone to separate walking facilities from vehicle zones, and place all key streetscape elements such as street lights, traffic signals, signage, and plantings in the buffer zone
- Allocate, where needed, excess sidewalk space to fulfill setback requirements for adjoining private development



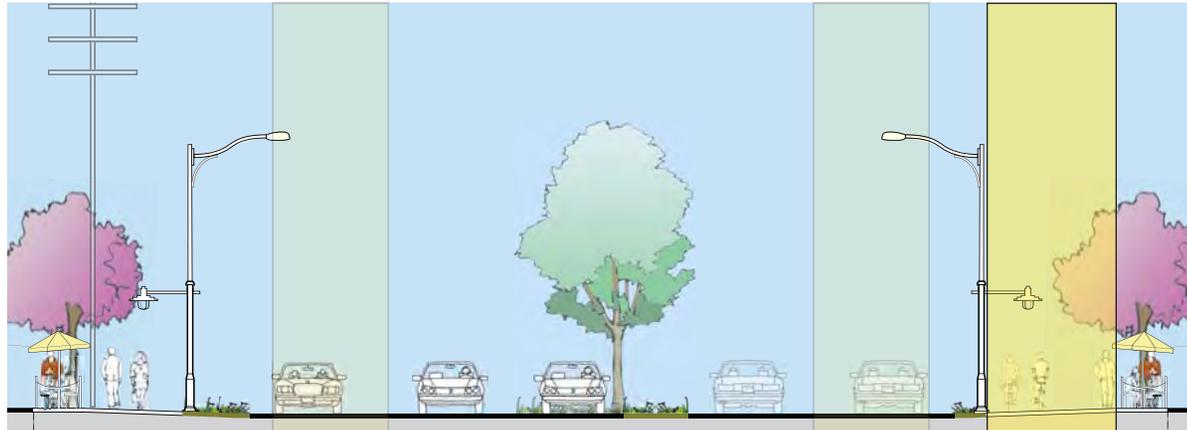
The pedestrian network should be seamlessly linked and safe for users of all ages and abilities, as in this vision of West Florissant Avenue where a midblock crossing connects the trail to the sidewalk at Hudson Creek



Sidewalks that are buffered with trees and green landscaping on both sides are more appealing



Streetlife and amenity zones can help activate streets, and define and clarify sidewalk usage



A separated multiuse path is envisioned along the street's east edge as the primary route for safe and efficient bicycle travel along the West Florissant corridor. Shared-use markings should also be considered for the right-most travel lanes to make clear bicyclists are also allowed to ride in the street, if so desired



A separated shared-use path is recommended for West Florissant for bicyclists' safety



The shared-use path can be a green, welcoming oasis that is a major asset to the area

6.1.6 BICYCLE FACILITIES

Well-designed and safe facilities for bicyclists are critical in creating a multi-modal roadway. These include bike lanes and shared roadways, as well as separated or protected bikeways, cycle tracks, and shared multiuse paths. Well-designed bicycle facilities are safe, accessible and easy to use for bicyclists of all ages and abilities. Facilities chosen should be appropriate for the particular street to which they are added. Where appropriate, a mix of facilities can be used along the same corridor to facilitate travel by bicyclists of different abilities and aims.

Recommendations for bicycle facilities on West Florissant include:

- Build a new separated multiuse path along the street's east edge for a safe and protected facility for bicyclists. The path should be a minimum of 10 feet, with 12 feet recommended

- Minimize driveways and other conflict points through careful access management, and mark crosswalks with special painting or paving to help brand the trail, increase visibility for drivers, and ensure safe crossing for trail users
- Create easements within the private realm to provide a wider multiuse path where needed, especially in commercial areas or other areas with high volumes of pedestrians; in such areas, delineate or physically separate bicycles from pedestrians in high-traffic areas
- Seamlessly connect the multiuse path to the wider local and regional bicycle and trail network
- Use signage and wayfinding to mark the path and direct users to important destinations; a yellow stripe or other marking is recommended for the path “midline”
- Consider branding opportunities through the use of unique paving materials and associated signage, lighting, and public art



Shared-use paths can separate bicyclists and faster-moving active transportation modes from pedestrians where needed and room allows



Stormwater planters, street trees, signage, and seating should be used along the trail



A separated shared-use path can help activate and enliven commercial areas

MAP 6.1. TREE CANOPY COVERAGE



The West Florissant Avenue corridor today has only 13% tree canopy coverage within the study area



Street trees have numerous benefits — for example, street trees can reduce air temperatures by 10 degrees and paved surfaces by up to 20 degrees

1,332 new trees

Benefits based on STL Study

Electricity Savings =	\$7,897.76
Air Quality Improvements =	\$3,276.72
CO2 Reduction =	\$1,558.44
Stormwater Reduction =	\$29,157.48
Property Value Increases =	\$37,029.60
Cumulative Benefit =	\$78,921.00 annually

Planting new street trees on West Florissant Avenue will have significant economic benefits

6.2 PUBLIC STREETScape IMPROVEMENTS

6.2.1 STREET TREES

Street trees in the public right-of-way and on adjacent private property are needed up and down the West Florissant corridor. Tree coverage at present is just 13% of the total study area (Map 6.1), and is particularly poor in some segments, such as Dellwood Town Center and South Gateway, where there are virtually no trees today.

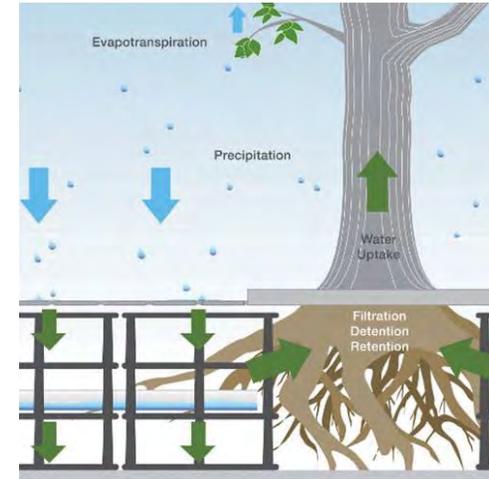
Street trees provide numerous physical, economic, and community benefits. Simply planting street trees has been shown to calm traffic and reduce crash rates. Trees also have many environmental and health benefits, along with economic benefits.. The cumulative economic benefits of the plan’s recommended street planting plan for West Florissant could amount to nearly \$80,000 annually. The presence of street trees has a dramatic impact on the streetscape and on how a streets feels and functions. Trees can be planted in medians, in buffers next to sidewalks, and along the street on privately-owned land. Tree selection is important: trees should be appropriate for the local climate and soil conditions, and should take into account nearby underground and overhead utilities, sight lines for motorists, and space available for a growing tree canopy.

Recommended strategies for street trees include:

- Provide six-foot wide planter areas and tree wells along major commercial streets. Where right-of-way is constrained, allow five-foot wide planter strips and tree wells
- Include planted buffers with street trees between sidewalks and the roadway to provide a safety and environmental buffer for pedestrians from traffic
- Plan landscaping and select species that provide shade, reduce heat gain and can help reduce light and glare impacts
- Where the planting strip is constrained to four feet or less, explore the use of structural soil four feet deep and minimum eight feet long in planting strips and under sidewalks in lieu of standard aggregate base
- Ensure at least twelve feet of canopy clearance at maturity from finished sidewalk elevation to provide clear emergency and service access, not block light from pedestrian-scale street lights, and allow for a visual connection along sidewalks and medians



Street trees and plantings have numerous benefits, including even traffic calming



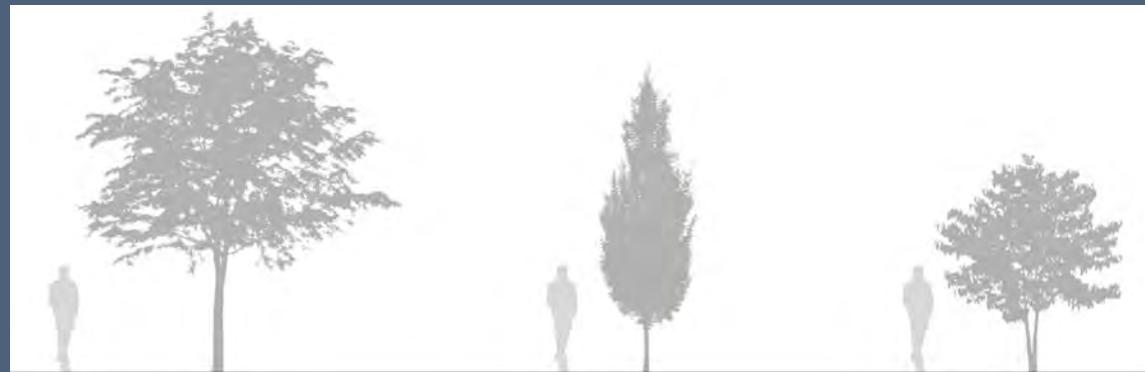
The use of structured soils gives the tree roots space to grow into over the years and prevents soil compaction, one of the leading causes of sidewalks heaving.

USE OF STREET TREE TYPES

The use of trees can transform a space, but to do so most effectively depends on strategic use of tree type depending on the physical context and the desired effect. Canopy trees are the largest and most transformative, also bringing the most environmental benefits. Other tree types include columnar trees, whose upright form can clearly define space, and ornamental trees, which can punctuate certain areas with color and are better utilized where space is constrained.

“Given a limited budget, the most effective expenditure of funds to improve a street would probably be on trees. Trees can transform a street more easily than any other physical improvement. Trees can do many things for a street and city, not the least of which is the provision of oxygen, and of shade for comfort. Green is a psychologically restful, agreeable color. Trees move and modulate the light. They can effectively separate pedestrians from machines.”

– Allan B. Jacobs



Canopy Trees

- Highest visible impact
- Provide shade
- Image and identity
- Create road definition

Columnar Trees

- Upright form
- Tight spaces and closer spacing
- Define pedestrian zones

Ornamental Trees

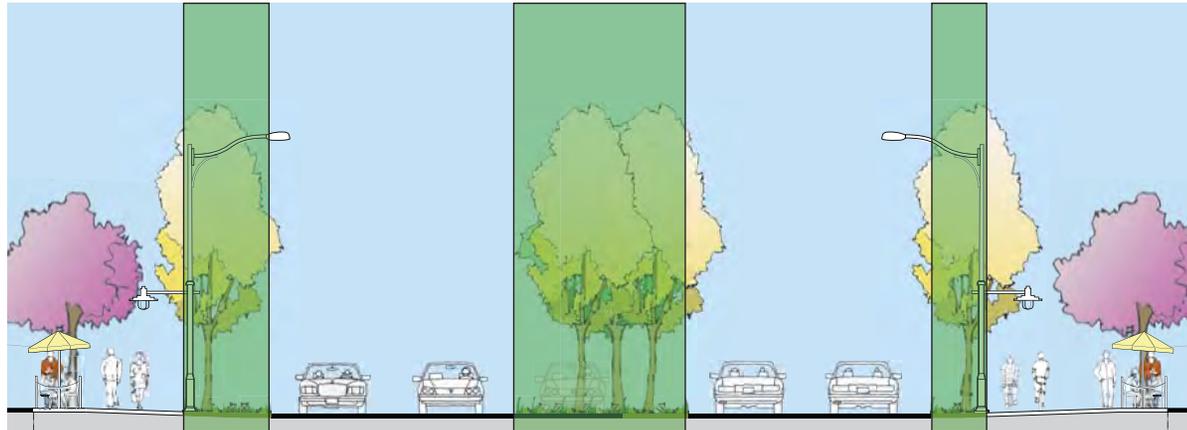
- Flowering accents
- Smaller scale
- Medians and planters
- Under power lines

STREET TREES AND RETAIL

There is ample evidence that street trees add value to retail environments by attracting more shoppers who spend more time and money. However, the selection of tree species and locations is critical to success, and designers need to work hand-in-hand with local property owners and merchants to assure their satisfaction. Concerns about sightlines to signage and entrances, as well as maintenance, are real. Nevertheless a good designer can solve for all these concerns and still make the district a greener, more comfortable and successful place.



Selection of tree species is critical to resolving the potential issues around business addresses, as is the careful pruning and maintenance to “limb up” any branches that have potential to block visibility.



Stormwater planters should be used wherever possible on West Florissant in buffers along the roadway edge and in the planted median



Stormwater planters control runoff and minimize sewage overflows and sewer system maintenance



Curb cuts from both the street and trail will transfer stormwater runoff to the stormwater swales for detention, storage, and filtering

6.2.2 STORMWATER PLANTERS

Stormwater planters are recommended in every segment of the West Florissant corridor, both in landscaped buffers on the edges of roadways and in the new green median.

Stormwater planters are landscaped bioretention areas that are designed to capture, store, and filter stormwater runoff. Stormwater planters' natural processes work to reduce stormwater volume, minimize flooding, and improve water quality by lowering sediment-borne pollutants in receiving waters, resulting in cleaner and healthier watersheds. Their installation on West Florissant will help prevent sewage overflows during large rains and reduce wear-and-tear on infrastructure.

On West Florissant, these planters should be installed in buffers on the edges of roads, in medians, and in green curb extensions at intersections. They should be planted with species that can tolerate periodic inundation, and can be underlain by engineered soils designed for specified retention times and pollutant removal. Well-designed bioretention planting areas will enhance the street corridor with added landscape color, texture, and variety. Their visibility provides for ongoing public education and engagement about the benefits of water resource and stormwater management issues.



Stormwater planters need periodic maintenance to keep them clean and operational

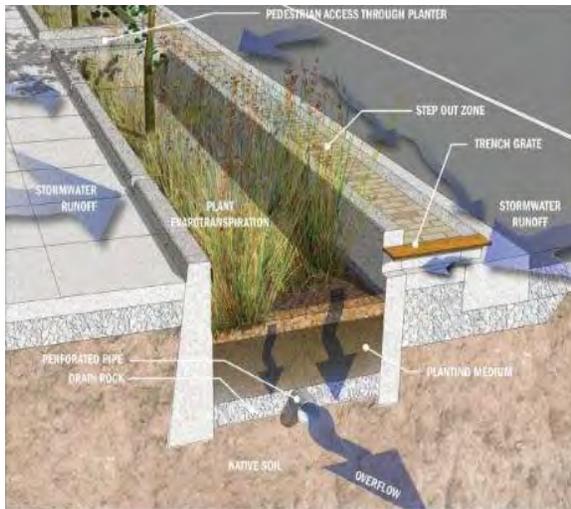


Medians can be designed to manage stormwater

The extent to which they are employed should be a decision made with those entities who will provide the routine litter pick-up, seasonal plant maintenance, and periodic inspection to make sure they are free of debris that could prevent their operation.

Strategies for stormwater planters include:

- Wherever possible, maximize landscape solutions like stormwater planters that provide sustainable water management. Green infrastructure like bioretention planters can be 5-30% less expensive to build and 25% less expensive to maintain than more conventional stormwater infrastructure.
- Include trees in stormwater planters, bioswales, and rain gardens wherever possible to capture, filter, and infiltrate rain water
- Allow small curb cuts for inflow and outflow of the storm water runoff
- Use a watershed approach to determine the best locations within a drainage area to place green infrastructure
- Minimize the use of impervious surfaces, instead using permeable paving materials or porous asphalt around tree wells, along parking lanes and in surface parking areas to increase infiltration of stormwater



Anatomy of a stormwater planter, allowing water to percolate into specially designed soil instead of tax the pipe and sewer system. Source: City of Portland, OR

STORMWATER STRATEGIES

- In general, above ground storm water planters should be prioritized over upgrades to underground storm water pipes and infrastructure, to save on costs and improve ewater quality
- Use permeable pavement in lieu of traditional materials for the multi-use path
- Stormwater planters are a priority in segments adjacent to Maline Creek and Hudson Creek (Segments 3, 4 and 5)
- Use bioretention in place of paved swales in Segment 5
- Storm water planters should not be placed on top of underground utilities



Distinctive street lights help create a unique identity



Street lighting has been shown to reduce crime

6.2.3 LIGHTING

Streetlight fixtures should be selected to efficiently direct light to the desired area of the roadway and sidewalk. Architectural lighting can also enhance signature buildings and contribute to the illumination and enhancement of public areas. Light fixtures should enable a variety of light distributions to adapt to different street and sidewalk configurations while maintaining the same fixture appearance. Lighting can include taller street lights to illuminate the roadway, intersections, and crosswalks; pedestrian-scale lighting; bollard lighting; in-pavement lighting; and building-mounted lighting for sidewalks, plazas, and other public spaces.

Recommendations for lighting include:

- Select a uniform family of light fixtures to efficiently direct light to the desired area of the roadway and sidewalk. The distribution type should be selected based on street and sidewalk width
- Mitigate light trespass by specifying the correct light distribution. Lighting fixtures should not be located close to windows, to avoid light trespass or glare and disturb the adjacent building's occupants. If necessary, house-side shields may be used on fixtures to minimize light trespass into residences or other areas.
- Provide both pedestrian-oriented and automobile-oriented street lighting along the length of the corridor
- Require pedestrian-scaled street lights to be at a lower height (approximately 12 feet high), closer spaced, and to use full spectrum bulbs
- Prioritize pedestrian oriented lighting along all pathways and open spaces to meet established lighting standards, and to provide a safe and comfortable pedestrian environment
- Coordinate streetlight design with that of other streetscape elements, and recognize the history and distinction of the neighborhoods where the light poles are located
- Consider LED street lights and guidance signs powered by solar energy to light walkways at nighttime
- Use Dark Sky-compliant lighting to minimize light pollution cast into the sky while maximizing light cast onto the ground
- Encourage new developments in Segments 3 and 5 to incorporate lighting that highlights architectural details, entrance areas, and windows

6.2.4 SITTING AND GATHERING AREAS

Seating can help activate areas and create social hubs, places to gather that can also make the streetscape more inviting and visually interesting. Seating can be as simple as a sidewalk bench or fold-up tables and chairs in a plaza. Informal seating also can be incorporated in short retaining or barrier walls or above-grade planters. In addition, retail businesses can provide outdoor seating, such as at sidewalk café tables.

Recommendations for seating include:

- Locate sitting and gathering areas in comfortable locations at key nodes and places where seating is most likely to be used, near active pedestrian areas, transit shelters, and commercial storefronts
- Select furnishings and other materials carefully with regard to usability, maintenance, and accessibility. A variety of seating should be incorporated to accommodate a range of physical abilities, as well as companion seating that enables wheelchair users to sit next to friends or family members. Ensure permanent ADA accessible seating every ¼ mile.
- Design sitting and gathering areas carefully to reinforce a brand or unique identity
- Consider working with developers to incorporate seating into building forms, such as seat-walls, which may be used as an alternative to free-standing benches
- Design seating to encourage sitting and to discourage lying down
- In some locations, consider providing movable seating that allows people to create their own “outdoor living rooms”



Seating should be located where it is most likely to be used



Seating areas create small social hubs



Bus shelters should allow for great visibility, and distinctive style can significantly enhance a brand. Photo courtesy Metro Jacksonville



Gateways and entry features make a bold statement, and should be located at logical access points

6.2.5 BUS SHELTERS

Bus shelters are essential to a well-used transit system. They can provide a safe place to wait for the bus, and offer protection from strong winds, harsh sun, and inclement weather. A well-designed and located bus shelter is more likely to be used, providing greater safety and comfort for transit patrons.

Recommendations for bus shelters include:

- Site shelters to minimize interference with pedestrian traffic on sidewalks and crosswalks, and allow adequate space to freely board and exit the bus
- Assure shelters allow convenient access to the bus, and if possible provide seating or a leaning rail
- Assure the side panels of a shelter allow great visibility of oncoming buses, so that patrons do not have to step outside the shelter to look for buses
- Customize the design of a shelter to enhance a brand; as Metro designs new shelters for the BRT it should consider how to customize the Dellwood Town Center shelter to help build an identity for Dellwood.

6.2.6 SIGNAGE AND GATEWAYS

Public realm signage and entryways can be effective communication tools. Clear and consistent signage facilitates wayfinding, and can be designed to enhance community character. Similarly, entry or gateway elements can be designed and located to make a bold welcoming statement to a community, and can complement signage, lighting, and other public realm improvements to present a cohesive identity.

Recommendations for signage and gateways include:

- Site gateway features at logical gateways and access points, as identified in the Vision Framework (see Section 4.1)
- Scale gateways appropriately for pedestrians and vehicles
- Employ wayfinding elements such as monumental gateway features, directional signage, and map kiosks to guide vehicular, pedestrian and bicycle circulation
- Locate wayfinding elements in amenity zones of sidewalks, or on bulbouts, medians and other planted areas at key locations along the corridor to facilitate connectivity
- Consider a hierarchy of directional signage that works at vehicular and pedestrian scales

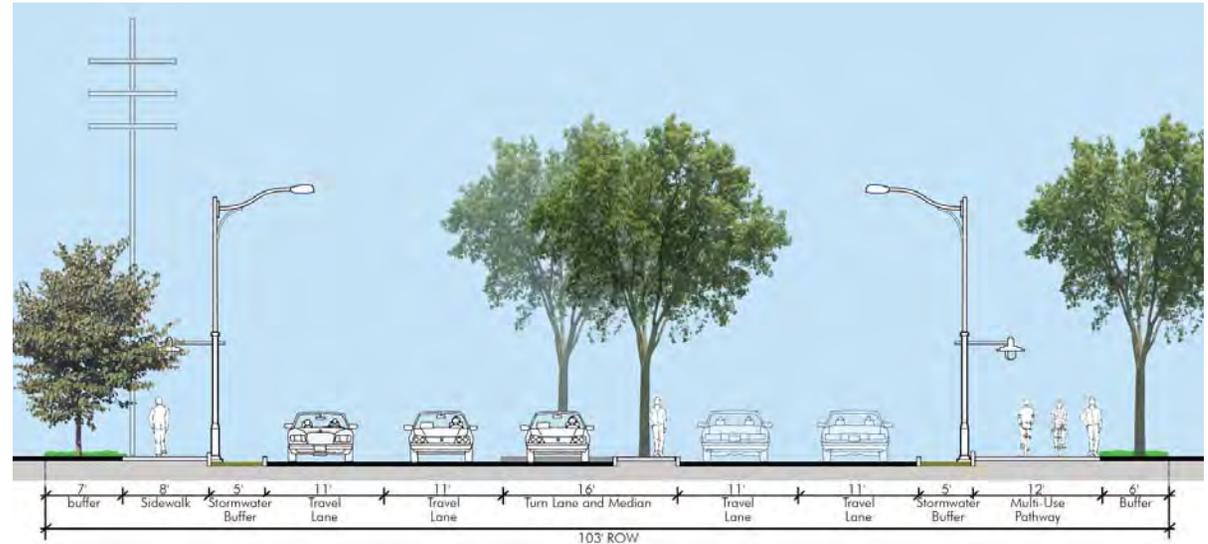
6.2.7 PUBLIC STREETSCAPE IMPROVEMENTS: UTILITIES

The image of the street could be vastly improved by moving utility and electric lines from view. Two basic strategies can be explored:

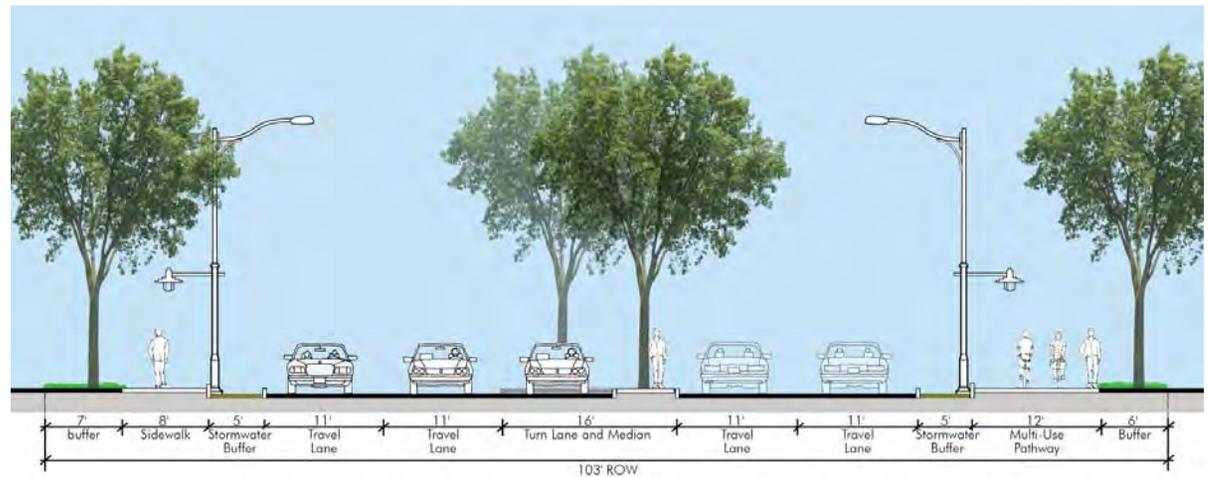
- Utilities can be put underground, an option which many communities have opted for. Digging up streets for reconstruction presents an opportunity to do this. The cost is high, however: initial estimates for West Florissant run to many millions of dollars.
- Run utility lines in back of properties where possible, with major cost savings. Since not every location along the street has access in the back, wherever a pole has to remain in front (for access reasons), a fabricated replacement pole could upgrade the appearance and meet break-away safety standards.

Either option will be a pronounced improvement; it is unlikely that the high cost of putting utilities underground will deliver so much more benefit to make it worth the extra cost over option two.

Leaving utility poles where they are is of course another option. To avoid the problem of trees growing into overhead wires, specific tree species need to be selected that top out below the level of the wires.



Street cross section with utility lines left above ground, showing tree species selection that avoids the problem of branches growing into wires



Street cross section with utility lines buried underground, showing the opportunity to then plant a much larger tree type



Developer-provided car-sharing can support corridor-wide parking goals



Parking screening improves the streetscape and the pedestrian environment

6.3 PRIVATE REALM IMPROVEMENTS

6.3.1 PARKING STRATEGIES

Zoning regulations with minimum parking requirements have resulted in automobile-centric development, excessive parking square footage on underutilized land, and disincentives for infill development and redevelopment along the West Florissant Avenue corridor. Parking should be treated as a mode shift, or transfer, and should enable comfortable transition to walking the rest of the way without having to cross vast areas of asphalt. By creating more flexible and targeted parking requirements that better reflect the corridor's diverse uses, special context, demographics, and accessibility by non-driving transportation modes, West Florissant Avenue can become more walkable, attractive, and economically viable.

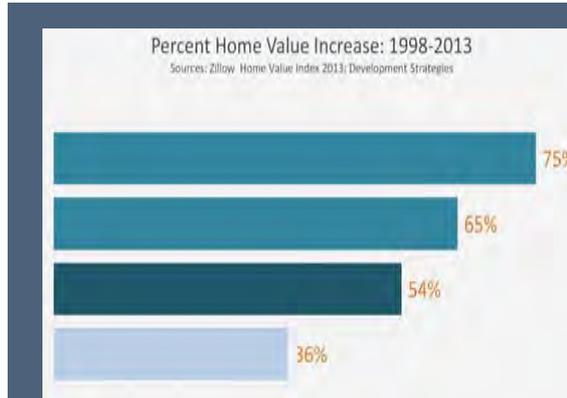
Several parking strategies should be considered throughout the corridor, with complementary changes in zoning regulations:

- Encourage parking screening, which improves the pedestrian experience in the near term by helping mitigate the negative impacts of parking lots along the street
- Set parking maximums, rather than minimums, to reduce overall parking supply. Provide context-specific standards (for example, in transit-oriented areas), and consider allowing shared parking and in-lieu fee payment for off-site parking
- Implement parking demand management programs, by offering improved transit service and incentives, installing pedestrian and bicycle facilities, and allowing developer-provided car-sharing or Transportation Demand Management (TDM) programs to offset parking requirements
- Consider innovative pricing strategies, such as varying pricing to encourage drivers to minimize trips at non-peak times; providing residential on-street parking permits; unbundling residential parking spaces with rents; and establishing parking benefit districts that use parking fees for local improvements
- In Segments 3 and 5, properties should be encouraged to share their parking areas for maximum efficiency and to help businesses with insufficient parking avoid adding new parking to a district that has so much excess parking overall. Formal common parking lots can also be created in vacant sites to give the owner an interim use.

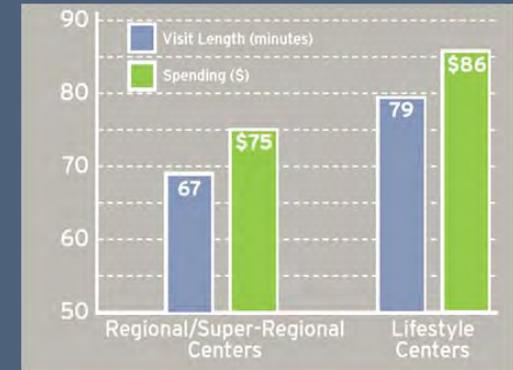
6.3.2 PLACEMAKING

Placemaking strategies and tools can create better places to live, work, and play, and can be used successfully by private developers to support livability goals in the public realm. Recommended strategies include:

- Allow and encourage temporary, “pop-up” placemaking strategies to bring street life to underutilized private parking lots along the street that would otherwise negatively impact the public realm by creating “dead zones”
- Work with developers to include active placemaking uses in new and redeveloped buildings



Investment in the quality of the place has been shown to raise property values and retail sales. Home values showed significant increases after investments to improve the public realm and streetscape in University City and Maplewood. Likewise, retail sales go up when districts are upgraded and made more pleasant and walkable.



“Where the place is inviting, shoppers stay longer and spend more.”

- Alexander Babbage



Placemaking includes working with developers to support beneficial private uses in the public realm, such as cafes and restaurants



Pop-up placemaking can activate underutilized parking lots that have become “dead zones”



Placemaking transforms the private realm to benefit and support efforts that enliven the public realm



Infill development (below) can help repair the urban fabric (as exists today, above) by clarifying access at the street and creating a consistent street wall of buildings for a safer and more lively pedestrian experience



6.3.3 INFILL DEVELOPMENT

Infill development takes advantage of vacant or underutilized land within an existing developed area to accommodate community redevelopment and achieve goals such as compact walkable districts and transit-oriented development. Infill development is recommended for the West Florissant Avenue corridor, especially around the Dellwood Town Center and South Gateway areas.

Recommendations for infill development include:

- Develop buildings up to the street to reestablish the street wall, to help the street become one that is designed for pedestrians, not cars, and to improve pedestrian access
- Ensure the primary orientation of all building entrances face the street or other public edge, rather than parking behind the buildings
- In Dellwood Town Center and South Gateway, encourage pedestrian-friendly retail, civic, and commercial use on the ground floor
- Provide common usable open spaces within multifamily residential developments

- Redevelop Springwood Plaza as a compact and walkable mixed-use neighborhood with mixed-income and senior housing
- Develop a new civic center area on land owned by the City of Dellwood around Dellwood Recreation Center
- At the intersection of Chambers Road, use infill development to improve the economic environment, reestablish the street walls, and improve the intersection for pedestrians and transit users.
- In the South Gateway area, use infill development to create a new healthy living apartment community, with greenway and trail connections to Maline Creek. Reestablish the street wall with new retail developments fronting the street, and place all parking behind the new retail and apartment buildings
- As building needs change, encourage opportunities for intensifying existing single story buildings by adding additional floors or frontage along the street



Springwood Plaza (above) could be transformed into a new walkable neighborhood with infill development (below)



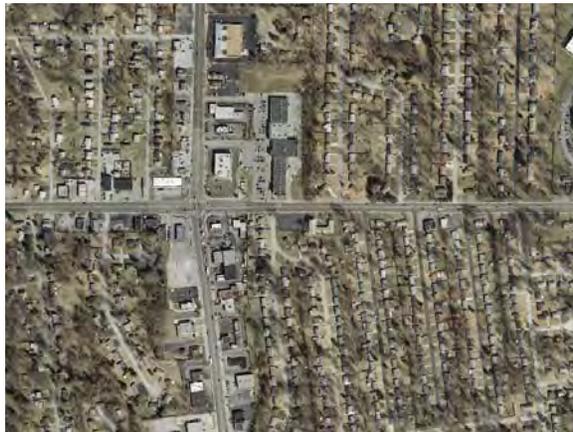
At Chambers Road, infill development should improve the environment for pedestrians and transit users



At South Gateway, infill development create a new healthy living apartment community, with the street wall reestablished and parking placed behind buildings



Prescriptive zoning can lead to sprawl



Overlay districts create particular standards for a designated area, such as Dellwood Town Center

6.3.4 FLEXIBLE ZONING AND DEVELOPMENT STANDARDS

Zoning has been a critical regulatory tool for land use. However, prescriptive Euclidean zoning, with segregated uses, has led to some of the problems facing the West Florissant corridor today, such as sprawl and traffic congestion, and has limited the development of lively mixed-use areas.

Flexible zoning strategies can help address these problems and advance community-specific desires. They can allow a mix of uses in a relatively small area, and guide specific uses to targeted locations. These strategies also can view land uses in terms of cumulative impact, rather than use category.

Flexible zoning recommendations include:

- Create overlay districts, which enable particular standards for a designated area
- Consider planned unit developments, which allow exceptions to zoning regulations to accommodate mixed uses or features that have broad community benefits

- Consider performance zoning, which focuses on measurable impacts (e.g., building size, site design, and the number and rate of people arriving and leaving a property)
- Consider incentives (e.g., density or parking) for desired uses such as affordable housing, or to preserve historic properties and structures
- Use form-based development codes that regulate site design to achieve desired built outcomes; these may include fairly detailed architectural design standards for different building types. For more on form-based code see <http://www.onestl.org/toolkit/category/practice/form-based-code> Flexible Zoning and Development Standards

Zoning has been a critical regulatory tool for land use. However, prescriptive Euclidean zoning, with segregated uses, has led to some of the problems facing the West Florissant corridor today, such as traffic congestion and strip retail, and has limited the development of lively mixed-use areas.

6.3.5 ECONOMIC DEVELOPMENT TOOLS

Cities have available a variety of fiscal tools to fund projects and induce private investment. These generally fall under the following five categories:

- Anticipated future revenue, also known as bond financing. A key program discussed below is Tax Increment Financing (TIF)
- Supplemental taxes, including Community Improvement Districts (CID), Special Business Districts (SBD), and Transportation Development Districts (TDD)
- Tax reductions, such as Planned Industrial Expansion Authority (PIEA) District, and Chapter 353 Tax Abatement
- Grants, which can be obtained through the local, state, and federal level, as well as through private institutions
- Tax credits, such as the Low Income Housing Tax Credits (LIHTC), New Markets Tax Credits (NMTC), and Brownfields Tax Credit

Anticipated Future Revenue

In certain instances, future taxes generated by real estate investments can be used to finance the current costs of facilitating those improvements. This mechanism is referred to generically as Tax

Increment Financing (TIF). The capture of taxes resulting from increased assessed value (the increment) is used to pay debt service on bonds issued to fund selected costs of development.

Along the corridor this could involve the creation of one or more new TIF districts. TIF revenue would be generated through the capture of net new property taxes, and could be used to finance public infrastructure and site acquisition and clearance.

To determine the efficacy of a TIF strategy, the level of taxable investment that is likely to be attracted to the selected areas must be evaluated—as should the value, or increment, that can be created for a larger TIF district.

Supplemental Taxes

This section focuses on improvement districts which are sometimes also referred to as special tax districts. In general, an improvement district generates a steady source of revenue to finance services and project costs that are considered “special” to landowners, residents, and businesses within a designated geographic area. Therefore, a separate tax is levied only on those properties within defined boundaries that will be benefited by these expenditures.

Community Improvement District (CID), Special Business District (SBD), and Transportation Development District (TDD).

A CID (or similar program) typically involves a special tax (property or retail sales) that supports an array of needed supplemental programs and services. These often include marketing, maintenance, security, and limited capital improvements, including streetscape enhancements. It is important to note that the imposition of such supplemental taxes or fees do not have to be limited to businesses and commercial properties but can also come from residents and residential properties.

Unlike a CID, TDD has more restrictive uses that are generally tied to capital improvements (as opposed to “softer” investments allowed under CID, such as marketing and security.

Tax Reductions

Personal and real property tax reductions, or abatements, are common economic development incentives, particularly where significant new real estate investment occurs or new jobs are created. In most instances, the abatements act to reduce operating costs of investment real estate (office, industrial, retail, or rental apartment buildings) for a designated period of time. In Missouri, the PIEA

and Chapter 353 abatement are two programs that can be utilized. Both offer 100 percent abatement for 10 years, followed by 50 percent abatement for 15 years.

Grants

While far less available than in the past, there remain opportunities to obtain grants and soft loans from a variety of both public and private sources. Private corporate and charitable foundations do target their support to different aspects of urban investment and revitalization such as economic development, environment enhancement, historic preservation, and open space and parks.

Most government grants are ones resulting from legislators' capacity to target appropriations to special community needs and high profile projects of wide public benefit. The following federally funded programs depend on continued funding of the MAP-21 transportation program.

- Federal TIGER (Transportation Investment Generating Economic Recovery program) funds could be explored for the corridor. TIGER is a joint HUD-USDOT program that gave out \$9.5 billion in grants in 2014, but received applications for 15 times that. Applicants must detail the

benefits their project would deliver for five long-term outcomes: safety, economic competitiveness, state of good repair, livability and environmental sustainability. USDOT also evaluates projects on their expected contributions to economic recovery, as well as their ability to facilitate innovation and new partnerships. Foundations might be compelled to participate (financially or otherwise) in the project—particularly if a component of the project is consistent with a particular mission.

- FTA funds joint development projects that build off of a transit facility and meet certain criteria that show the project is transit-oriented.

Several sources of funding pass from the federal government through East-West Gateway Council of Governments to local projects. Obtaining funding through these programs is dependent on a combination of eligibility, available funding, and a variety of other factors.

- The Transportation Improvement Program (TIP) is a statewide list of transportation projects that looks ahead four years, which is put together by East-West Gateway and other MPOs to allocate federal funding. State, regional and local transportation agencies

update the program each year to reflect priority projects. There are 129 new projects included in the draft FY 2015-2018 TIP.

- The Transportation Alternatives Program (TAP) is available to fund projects that target alternative transportation such as bicycle and pedestrian facilities, community improvements, environmental mitigation, and Safe Routes to School. Sponsors must be able to provide a minimum of a twenty percent funding match. In 2014 approximately \$8 million is available for Missouri projects.
- The Congestion Mitigation and Air Quality Improvement Program (CMAQ) is an application process available only for projects in areas not meeting federal air quality standards for projects that will help them meet those standards. Projects that meet all eligibility requirements may get onto the list for the state Transportation Improvement Program (TIP).

Funding through grants or other programs may also be available through: the Metropolitan Sewer District, who can advise or assist on paying for green infrastructure improvements such as stormwater planters; MoDOT, which has particular responsibility for the approach to I-270

and would therefore be a partner in construction; and Great Rivers Greenway, who will be an active partner in funding the creation of the Maline Greenway, and potentially will take interest in a greenway west along Hudson Creek.

Tax Credits

Because the private market alone cannot deliver the retail and housing products that are proposed as part of this development plan, public support is necessary to make development economically viable. Tax credits are one form of public participation that can be used to reduce the costs of development, thus making projects viable that otherwise could not be developed.

Two types of tax credits would be particularly useful: Low Income Housing Tax Credits (LIHTC) and New Markets Tax Credits (NMTC). LIHTC are used to provide affordable housing, defined broadly as rental units offered at below market rents to households that earn below 60 percent of area median income (AMI). New Markets Tax Credits are used for the development of commercial properties in distressed areas.

There are many similarities in the broad ways in which the tax credits work. They provide tax credits for a percentage of eligible costs (which consist of most building hard and soft costs; infrastructure costs are rarely included). Once

awarded, the future value of these tax credits can be bought and sold on the private market, usually at a discounted rate. This discounted rate becomes the “equity value” of the tax credits. However, while LIHTC can provide a significant percentage of project funding, NMTC generally provides only a small fraction. Although the tax credits can be worth 39 percent of eligible costs, once administrative and professional fees are subtracted, the tax credit value tends to be approximately 15 to 20 percent of development value.

Another possible form of revenue could come from Missouri brownfield tax credits. These are highly competitive allocations that are typically awarded to projects with a significant amount of job creation. A common award amounts to a credit of \$425, annually, over a 10-year allocation period. Thus, if a new, 30,000 square foot healthcare facility brought an estimated 120 new jobs to the area, a brownfield tax credit award of roughly \$500,000 is possible. If the equity value of these credits is 85 percent of the allocation, this would amount to a present value brownfield tax credit of \$425,000.

Impact of Tax Credits on Phasing

The state of Missouri places limits on the number of tax credits that can be awarded to a project on an annual basis. This can have a significant

impact on the phasing of a development. Further, tax credits are not necessarily awarded to the same project in consecutive years. In this way, an affordable project that could technically be absorbed into the market in two years might actually take five to seven years—or more—to develop, due to the constraint of limited tax credit allocations.

Impact of New Markets Tax Credits on Location

New Markets Tax Credits can only be allocated in qualifying census tracts; the chief criterion for this designation is median household income. In this instance, all properties along the West Florissant Corridor are eligible for NMTC. However, three of the four quadrants (northeast, southeast, southwest), relative to the Chambers and West Florissant intersection, receive the added designation of being “severely distressed”, implying they may receive some preference in the allocation of these credits.

